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AMERICAN INSTITUTE OF REAL ESTATE APPRAISERS

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The JOURNAL *of the*

AMERICAN INSTITUTE OF REAL ESTATE APPRAISERS

of the National Association of Real Estate Boards

Joseph B. Hall, *Editor-in-Chief* Harry Grant Atkinson, *Managing Editor*

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LOOKING AHEAD!

The following articles now in preparation will appear in this Journal in subsequent issues:

The Effect of the New Deal on Real Estate
The Effect of Credit, Production, and Profit on Market Price
The Management Factor
Analysis of the Competitive Factor
Appraising Central Business Properties for Tax Purposes
The Place of Buildings in Farm Real Estate Valuation
Condemnation Appraisal Procedure
Appraisal of Trees and Shrubbery
The Influence of Special Assessments on Home Values
The Influence of Special Assessments on Farm Values
Neighborhood Factors in Appraising Outlying Business Property
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The Appraisal Report
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The Technique of Preparing for Court Cases
The Appraisal of Cemeteries
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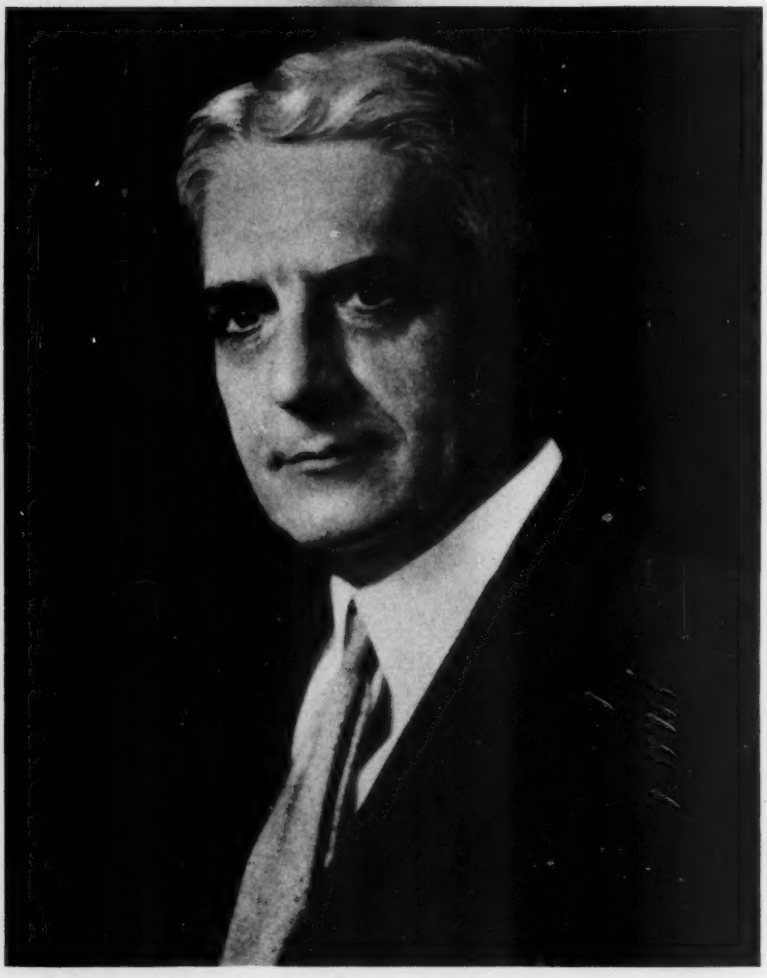

WALTER S. SCHMIDT, M.A.I.

President-Elect of The National Association of Real Estate Boards

Some Appraisal Mathematics

By ARTHUR L. LAYDEN, M.A.I.

"I often say that if you can measure that of which you speak, you know something of your subject, but if you cannot measure it, your knowledge is meager and unsatisfactory."—*Lord Kelvin.*

ECONOMICS is not an exact science and it has no Laws that are immutable. It is a study of human nature, of human habits, actions and reactions, all of which refuse to be card indexed.

History is said to repeat itself—but it never does exactly. If it did the future might be perfectly clear,—if the history of the past were understood thoroughly. Values of real estate depend largely on human actions and reactions and hence real property values can never be *determined,* they can only be *estimated.* If they could be determined exactly, only a knowledge of these laws and the formulae for representing them, and solving for the unknown, would be necessary. Values cannot be determined by tables, formulae, etc. Formulae only *measure* the data upon which values depend.

Synthesis is defined as the "putting of different things together, the combination of separate substances, elements or subordinate parts into a new form." Analysis is defined as "the resolution of a compound into its parts or elements." Formulae (or tables derived from them) are, therefore, *Synthesis of data for the analysis of values.*

Formulae do have uses in *estimating* value but such estimates will be only as good as the data and knowledge behind them.

The blind use of formulae and the inclusion therein of data, only partially understood, will give an answer; but the answer probably will be far from a correct estimate unless formulae and data are thoroughly understood and correctly applied and coordinated.

If Economics were an exact science, such as Physics, Chemistry, Mathematics, or Astronomy; and if the application of formulae to the facts or data found would give *exact* — unchanging values there would be no need for appraisers. Mathematical devices, or formulae, do, however, have their uses in *helping* the appraiser arrive at his conclusions.

Even with accurate statistics or data, the correctness of the conclusions arrived at will depend almost entirely on how well the formulae that are used are understood. How they were derived and *how, where,* and *why* they are applicable. It is not merely sufficient for an appraiser to remember formulae or know where to find them, or to use tables of compound interest, annuities, sinking funds, etc., derived from them unless he thoroughly understands their derivation, their evolution, and *how—, where—, why—,* and *when* to use them. Otherwise he may (and probably will) use the wrong one. If he could trace their development, step by step, and could see and understand the interrelation of one to another he would then be in a position to use them correctly. He could also explain them simply to those to whom formulae are so much "camouflage" to hide lack of knowledge, and show how they apply and why they are frequently necessary.

Without this knowledge he may, for example, blindly use for the calculation of a sinking fund any of the Inwood, Hoskold, Morkill, O'Donahue, Grimes and Craigue, or other formulae, only one of which can solve the particular problem. Each may produce vastly different results; each is evolved from distinctly different assumptions; and the use of any one assumes a knowledge that it is the proper one for that set of conditions. Without this knowledge he may be right; but the odds against him, in this case, are five to one.

In the past, many appraisers have used the Inwood formula for the calculation of a sinking fund, not even knowing it by name, or the assumptions upon which it was developed, or where the conditions under which it was used in no way suited the facts. This formula assumes that interest can be *safely compounded*, at 6%, 8%, 10%, or 12%. This will be illustrated further on.

Many appraisers are not mathematically inclined. Many who might be so inclined do not have the training; and many others who might be so inclined do not have the time to wade through book after book to learn just what they want.

Available tables may not be, and generally are not, comprehensive enough to cover an odd interest rate or a combination of odd rates which the appraiser may desire to employ (such as 3¼%, 5¾%, 6½% etc.).

In most appraisal literature, formulae are given as statements of fact with no explanation. Sometimes their derivation is briefly, and not too clearly, sketched. I do not believe that the derivation of these formulae, from the beginning, and in the simplest way has as yet been presented, and an effort will be made herein to do so.

When a complete understanding is had of them, the right formula can correctly be applied for any rate or combination of rates; and complete, comprehensive tables will be unnecessary.

A complete course in arithmetic and algebra cannot here be included and it will have to be assumed that the reader has at least an elementary knowledge of algebra to clearly understand the processes step by step. To make it as clear as possible, some arithmetical analogies will be given. If any step is not clear at first, further careful reference and study will be necessary and helpful.

ARITHMETICAL ANALOGUES

Transposition

By transposing any figure or symbol from one side of an equation to the other we simply subtract it from both sides. This process eliminates it from one side and puts it on the other side with its sign changed. If it happens to have had a minus (—) sign before transposition, the subtraction of a minus quantity is equivalent to adding a plus quantity.

Thus

I(a) $3+4=5+2$. Transposing the "3" we have
$3+4-3=5+2-3$, or $4=5+2-3$ as the 3 cancels out on the left side.

Also

I(b) $9-2=4+3$, transposing the "2" we have
$9-2-(-2)=4+3-(-2)$ or
$9-2+2=4+3+2$ or
$9=4+3+2$ as the "2" cancels out on the left side of the equation.

Fractions

In the development of the formulae, later, a clearing of algebraic fractions is often necessary and for this reason I want to call particular attention to the difference between $\frac{\frac{1}{2}}{3}$ and $\frac{1}{\frac{2}{3}}$. Altho they look a good deal alike they produce vastly different results and a thorough understanding is necessary to understand the processes to come.

II(a) The fraction $\frac{\frac{1}{2}}{3}$ is one half divided by three or $\frac{1}{2\times3} = 1/6$ while one divided by two thirds $\frac{1}{\frac{2}{3}} = \frac{1\times3}{2} = 3/2 = 1\frac{1}{2}$ (which is 9 times as large as the other). Great care must be taken as to the position of the main dividing line.

Similarly:

II(b) $\frac{\frac{3}{4}}{\frac{5}{8}} = \frac{3\times8}{4\times5} = \frac{24}{20} = \frac{6}{5} = 1\,1/5.$

Multiplication and/or Division of Both sides of an equation.

Multiplication and/or division of *both* sides of an equation does not affect the veracity of the equation in the least but frequently serves to simplify complicated situations.

For instance:

III(a) $1+6 = 3+4$

Multiply *both* sides by 5 and we have

$5(1+6) = 5(3+4)$

III(b) Now divide both sides by $(1+6)$ and we have

$\frac{5(1+6)}{(1+6)} = \frac{5(3+4)}{(1+6)}$ On the left side the $(1+6)$ cancels and we have

$5 = \frac{5(3+4)}{(1+6)} = \frac{5\times7}{7} = 5$

As stated before, these maneuvers will be frequently met with in the development and simplification of the formulae to come and should be thoroughly understood.

INTEREST

Interest is the rent for the use of money (or capital). According to strict theory interest is being added to principal continually. In practice, however, it is stipulated that interest comes due at the end of stipulated intervals (generally years). Principal plus interest is called the *amount*. If this amount is put at interest the interest on it is interest on the original principal and interest on interest. This latter is called *compound interest;* and the amount at the end of the second and succeeding periods is called the *compound amount*. The difference between the compound and the original principal is the *compound interest*.

If interest is compounded oftener than yearly, as semi-annually or quarterly, the number of times *per year* which it is compounded is called the frequency or conversions.

SYMBOLS

For the purpose of developing these formulae we will use the following symbols:

P = Principal. (In most of the formulae, for simplicity, this will be assumed to be 1.)

R = Simple interest, or speculative rate, expressed in decimals as .06, .07, .10, etc.

r = Safe interest or compound interest rate similarly expressed.

n = Time in years—or—number of interest paying periods.

m = Frequency or number of periods per year (semi-annually m = 2, quarterly m = 4, etc.).

A_s = Simple amount.

A_c = Compound amount.

I = Total interest—(*Not* the interest rate).

P.W. = Present worth (*this will be used both for the present worth of an annuity and for the present worth of a single payment due at some future time.* In the case of an ANNUITY DUE however, it will be given the subscript "d" as PW_d.)

Z = Amount of annual or periodical payment necessary to amortize a debt.

D = Original amount of the debt to be amortized.

X = Income.

SIMPLE INTEREST

Interest is expressed as a percentage: $I = P\times R = PR$ and if for more than 1 year

(1) $I = P\times R\times n = PRn$

The simple amount is principal plus interest then

(2) $A_s = P + PRn = P\ (1+Rn)$

For simplicity and clarity, and to eliminate the use of superfluous symbols, in the following formulae we will consider that the principal, "P," is unity. (As stated above under Symbols.)

Hence

(2) $A_s = 1 + Rn$

COMPOUND INTEREST

For the first year $A_s = 1 + R$. For the second year, the interest is $R \times (1 + R)$ and the compound amount:

$$A_c = A_s + A_s R$$
$$= A_s (1 + R)$$
$$= (1 + R) \times (1 + R) = (1 + R)^2$$

(3) and for (n) years:

$$A_c = (1 + R)^n$$

If the interest is compounded oftener than annually the *simple interest* is figured for only the $\left(\frac{1}{m}\right)$ th part of a year which is the same as dividing the annual rate (R) by m; *but* it is compounded *m times per year.*

For example if interest were compounded semi - annually, the principal would draw *simple interest* for only the first half of the year, or, stated another way, one-half the interest for the whole year, hence

$A_c = \left(1 + \frac{R}{2}\right)^2$ for the first year and if compounded semi-annually for n years

$$A_c = \left(1 + \frac{R}{2}\right)^{2n}$$

If the frequency of compounding were quarterly, monthly, or m times per year (m) would be 4, 12, etc., hence

(4) $$A_c = \left(1 + \frac{R}{m}\right)^{nm}$$

As compound interest is the difference between the compound amount (A_c) and the *original principal* and as we have assumed that the principal, for the purpose of the development of these formulae, is 1, then

(5) Compound interest = $A_c - 1$ or
$I_c = (1 + R)^n - 1$

PRESENT WORTH (P. W.)

It is often necessary to know the value *now* of a sum of money due, either with or without interest, at some definite future date. This is its present worth.

By "with or without" interest we mean that the sum due at the definite future date is a fund that *now* may or may not be drawing interest. If it is simply a sum which is not now drawing interest it is said to be "without interest." If it is now earning interest but not due until a future date it is "with interest." This distinction is vital because if it is now earning interest it may be earning at a different rate than the rate at which it is discounted to get its present worth.

The present worth of this sum is the same as the amount which must be placed at interest *now* at compound interest to equal the amount due at the given future date. It is a *smaller* sum which if put out at compound interest at a given rate will amount to a known sum at the given time. The *relationships* between the elements are the same as in compound interest, explained above, but the thing sought is the reverse.

The present worth (P.W.) of $1 due 1 year from now at 7% interest is

$$\text{P.W. of } 1 = \frac{1}{(1 + .07)}$$

if due 2 years hence at compound interest

$$\text{P.W. of } 1 = \frac{1}{(1 + .07)^2}$$

and for any rate (R) and for any number of years or periods, (n), this becomes

(6) P.W. of $1 = $\frac{1}{(1+R)^n}$ or

$$\frac{1}{\left(1+\frac{R}{m}\right)^{nm}}$$

Example 1

What is the present worth of $5000 (*not now drawing interest*) due in three years, interest compounded *annually* at 4%?

$$\text{P.W.} = \frac{5000}{(1+.04)^3} = \frac{5000}{1.12486}$$

[Note: $(1+.04)^3 = (1+.04) \times (1+.04) \times (1+.04)$]

$= \$4444.98$

Example 2

What is the present worth of $5000 (*not now drawing interest*) due in three years, interest compounded *semi-annually* at 4%?

$$\text{P.W.} = \frac{5000}{\left(1+\frac{.04}{2}\right)^{2\times3}(1+.02)^6} = \frac{5000}{1.12616242} = \$4439.66$$

In the short time of *three years* the difference in the present worth between compounding annually and semi-annually is only $5.32. *This increases greatly over longer periods.*

Reasonable expectancy will certainly eliminate the probability of obtaining compound interest at a high rate (4% or higher). It is my opinion 4% cannot be expected and that 3%, 3¼%, or 3½% is more reasonable.

DISCOUNT

Discount is a consideration for the payment of a debt before it is due. It is usually stated at a certain rate per annum and is paid *in advance*. When computed for more than one period it is called *compound discount* which really is compound interest deducted in advance but is computed on the *present value* and not on the amount due at the definite future date. It is the difference between P and the present worth of P or if (P) is *unity* it is the difference between 1 and the P.W. of 1. Hence:

(7) (Discounted at compound interest rate of R) Compound Discount

$$= 1 - \frac{1}{(1+R)^n} \text{ or}$$

(8)
$$= 1 - \frac{1}{\left(1+\frac{R}{m}\right)^{nm}} \text{ if}$$

it is compounded oftener than annually. This however, is very seldom done and was included above to show the theory. For the balance of this article we will consider that interest is not compounded oftener than annually and the frequency symbol (m) will be omitted hereafter. It can be substituted in any of the formulae when desired, however.

ANNUITIES

An annuity is a series of payments made at equal intervals of time. They usually are equal payments and they *usually* are made at the *end* of the period. They may, however, be any amounts, they may be uniformly increasing or decreasing, and they may be made at the beginning of the period. In the latter case they are called *annuities due*. Annuities due are seldom met with and will not be considered here for the development of the formulae but will be covered later on.

AMOUNT OF AN ANNUITY

The amount of an annuity is the total sum accumulated at the end of the term

of the annuity by the prompt reinvestment of each payment of the annuity as it comes in. It is the amount at maturity of all the periodical payments plus interest on all the payments and interest on interest (as the latter is promptly reinvested).

We will assume an annuity of 1 dollar each year for 4 years with interest at 3%. If the payments are made at the *end of the year*, the first payment accumulates at compound interest for 3 years, the second payment accumulates for 2 years, the third payment for 1 year, and the fourth is *cash*. Hence:

The amount of an annuity of 1
$= (1+3)^3 + (1+.03)^2 + (1+.03) + 1$
$= 4.183627$

In general:

(9) Amount $= A_c = (1+R)^{n-1} + (1+R)^{n-2} + (1+R)^{n-3} + \text{---} + (1+R) + 1$ (refer back to equation IIIa, under arithmetical analogies) now, multiplying *both sides* of the equation (9) by $(1+R)$ we have

(10) $A_c \times (1+R) = (1+R)^n + (1+R)^{n-1} + (1+R)^{n-2} + \text{------} + (1+R)$.

Subtracting equation (9) from equation (10)

$A_c \times (1+R) - A = (1+R)^n - 1$ or

(11) $A_c [(1+R) - 1] = (1+R)^n - 1$
or $AR = (1+R)^n - 1$

(Refer back to equation IIIb under arithmetical analogies) now, dividing *both sides* of the equation (11) by R and we have

(12) $A_c = \dfrac{(1+R)^n - 1}{R} =$ the amount of 1 per annum.

In a previous formula (3) we have seen that $(1+R)^n$ is the *compound amount of 1* and that $(1+R)^n - 1$ is the *compound interest* [equation (5)] hence the amount of an annuity can also be found by *dividing the compound interest by the interest rate.*

Example

What is the amount of an annuity of 1 for 4 years at 6% compounded annually?

Principal	1.00000000
Simple Interest	.24000000
Accumulations of interest on interest	.02247696
Compound Amount	1.26247696
Compound Interest	.26247696

As the compound interest (.26247696) is the difference between the compound amount of 1 and 1—this divided by the rate (.06) gives the amount of an annuity of 1 for 4 years at 6%

$$\frac{26247696}{.06} = 4.374616$$

As proof of the above use formula (9)

$A = (1+06)^3 + (1+06)^2 + (1+06) + 1$
$= 1.191016 + 1.1236 + 1.06 + 1$
$= 4.374616$

PRESENT VALUE OF AN ANNUITY

The present value of an annuity is the sum of the present values of each of the annuity payments. It is the sum of *each of the annuity payments* discounted at the given or desired interest rate for the period in the future at which *each* is to be paid. It can also be considered as the sum which, if put at compound interest, will produce the periodic payments of an annuity contract when they become due and will be *entirely used up* when the last one is paid out. Another way to look at it is that it is the sum which if now placed at compound interest will produce the total amount of the annuity payments *with interest on each* for the time each accumulates.

The principal 1 discounted at the rate R for one year is $\dfrac{1}{1+R}$. This can also be algebraically expressed as $(1+R)$ with a *minus exponent* thus: $(1+R)^{-1}$. If 1 were not due for 2 years, its present

worth, discounted for 2 years at compound interest would be $\frac{1}{(1+R)^2}$ or $(1+R)^{-2}$. If due 3 years hence, it is $(1+R)^{-3}$ and if due "n" years hence it is $(1+R)^{-n}$.

The sum of these discounted annual payments of 1 is the present worth of an annuity of 1, therefore P.W. of an annuity of 1

(13a) $= (1+R)^{-1} + (1+R)^{-2} + (1+R)^{-3} + \text{---} + (1+R)^{-n}$ or

(13b) P.W. of an annuity of $1 = \frac{1}{1+R} + \frac{1}{(1+R)^2} + \frac{1}{(1+R)^3} + \frac{1}{(1+R)^3} + \text{---} + \frac{1}{(1+R)^n}$. Now multiply *both sides* of this equation by $(1+R)$ (refer back to equation 3(a) under arithmetical analogies) and we have

(14) (P.W. of annuity) $\times (1+R) = 1 + (1+R)^{-1} + (1+R)^{-2} + \text{----} + (1+R)^{n-1}$.

Subtracting equation (13) from equation (14) we have,

(15) $(P.W.) \times (1+R) - PW = 1 - (1+R)^{-n}$ or

$PW + PWR - PW = 1 - (1+R)^{-n}$ or

$PWR = 1 - (1+R)^{-n}$

Dividing *both sides* of this equation by R we have,

(16a) $PW \text{ of an annuity} = \frac{1-(1+R)^{-n}}{R}$ or

(16b) expressed another way $= \frac{1}{\frac{1-(1+R)^n}{R}}$

(17) Simplifying this compound fraction

$PW \text{ of an annuity} = \frac{(1+R)^n - 1}{\frac{(1+R)^n}{R}}$

or $= \frac{(1+R)^n - 1}{R(1+R)^n}$

Refer back to equation (7) we see that the numerator of equation (16b) is the formula for *compound discount*. Therefore the present value of an annuity can be found by dividing the *compound discount* by the interest rate *expressed decimally*.

INWOOD FORMULA

Equation (17) is the *Inwood Formula* which is so *very frequently* used erroneously.

In all of the foregoing development of formulae, mention has been made of *but one interest rate*, which we have repeatedly stated was the simple interest rate or the *speculative* rate R (This has been for the sake of clarity only as it is silly to believe that a speculative rate of 10% or 12% can be compounded).

The fact that only one interest rate has appeared, very cleverly masks or hides the fact that, as a matter of fact, *two* interest rates are involved—or more truly stated, that the same rate is used *twice*—first as the simple or speculative rate R in the denominator of the Inwood formula and secondly as the compound or "safe" interest rate, r,—(where it is compounded in both the numerator and denominator).

If an investor decided that, on account of the risk of future payments being made (and other risks) he should receive simple interest on his investment at the speculative rate, R, say 8%, 10% or 12% it would be foolish to expect that he could get *compound interest* on the yearly or periodic payments at the same rate (8%, 10%, 12%). His experience with banks, etc., would tell him that he could not get more than 4% and that more likely he could only get 3%. This very clearly illustrates the fallacy of the use of the Inwood formula in the appraisal of real estate.

Later on, in the development of the Hoskold formula, it will be shown (perhaps more clearly) that the Inwood formula does use the same interest rate (the speculative rate R) twice.

REVERSIONS

Previously, while discussing the Present Worth of an Annuity, we saw that if "1" were not due for 2 years, its present worth discounted 2 years at interest rate, R, would be $\frac{1}{(1+R)^2}$ or $(1+R)^{-2}$, and if due "n" years hence its present worth would be P.W.: $= \frac{1}{(1+R)^n}$ or $(1+R)^{-n}$.

The reversionary interest in a lease is figured by this same formula.

Example

Assume that a 49 year lease still had 10 years to run and that it was *estimated* that the building (which would revert to the fee owner or lessor at the expiration of the lease) would, 10 years hence, be worth, say $100,000 and that money was worth 4%. The value of this reversionary interest *now* would be worth $100,000 discounted for 10 years at 4% compounded annually.

P.W. of reversion

$$= \frac{100000}{(1+.04)^{10}} = \frac{100000}{1.48023}$$

$$= \$67,550.31$$

ANNUITIES DUE

As stated before, payments may be made at the *beginning* of the period instead of at the *end.* Such annuities are known as *annuities due.* Life insurance premiums and sometimes rentals are paid in advance and are annuities due.

In this case the first payment is *cash* and will therefore accumulate or draw interest, for (n) years instead of (n – 1) years, as before, and the last payment will accumulate 1 year instead of being *cash* and the amount of the annuity due, A_d, is found by figuring an ordinary annuity for *one more period* and subtracting one *cash* payment (the last in an ordinary annuity) hence

(18) $A_d = (1+R)^n + (1+R)^{n-1} + \text{-----} + (1+R)$.

By referring back to equation (9) you will see this equation (18) is equation (9) multiplied by (1 + R) with 1 subtracted

Example

Using the same example we used before of an annuity of 1 each year for 4 years at 3% but *due at the beginning* of the year instead of at the end of the year (as before), the first payment is cash and will draw interest for 4 years, the second will draw interest for 3 years, the next for 2 years, and the last for one year. The amount, therefore, will be

$A_d = (1+.03)^4 + (1+.03)^3 + (1+.03)^2 + (1+.03) = 4.309136$

The difference between this amount and the amount of an ordinary annuity or (4.309136 – 4.183627) is .125509 which is the compound interest on 1 payment of 1 (the first) for 4 years (or n years).

PRESENT VALUE OF AN ANNUITY DUE

As the first payment is cash its present worth is 1 and the remaining payments are an ordinary annuity for n – 1 years. Hence:

(19) $P W_d = 1 + P.W.$ (for n-1) years.

SINKING FUNDS

A sinking fund is a fund accumulated for the purpose of paying off a debt *when due.* It is a series of investments at compound interest with which a debt can be retired when due.

For instance, if an investor buys a lot and builds a building on it for the purpose

of receiving an income from it, he is entitled not only to receive this income (net) but he is also entitled to receive back, or have his original investment in the building returned to him when it has lived its useful life. The land is usually considered as enduring in perpetuity (however this is not always the case as regards its value) but it is a known fact that the building will not last forever and it is also the case that even though the building may be in good physical condition at the end of a 25 or 50 year lease, it probably will have become obsolete or an improper improvement in some other sense and will not produce enough income to be a profitable investment. It would be then good business to raze it and erect a more suitable one in its place or the vacant land alone may be made to produce more income than if it had the old building on it (as for instance for automobile parking lots in some of our larger cities). This is due to obsolescence.

When an asset is purchased its probable *effective* life, or its *economic* life, or its *profitable* life, and its replacement cost must be estimated and a fund be built up from the combined income of the land and building to retire the building (to pay back its cost) at the end of its economic or profitable life.

Payments to this retirement fund are set aside out of income (usually at the end of the year) and are considered to draw compound interest until maturity *at a safe interest rate.*

These payments are an annuity which, with compound interest, will accumulate to an amount equal to the cost of the building (or the debt). Although it is an annuity it has some decided differences from the annuities we have previously considered. For instance:

(1) In the other annuities considered, we knew (or assumed) what the payments were and wanted to know *what they would amount to at the end of the term,* while here we know what they *must amount to at the end of the term,* and want to know what size payment is necessary to get this amount.

(2) In the other annuities considered we were interested in the *present values* of the payments coming in (income) at future dates. Here we must find what we have to *pay out and we are not interested in present value but future value.*

In equation (12) we saw that the Amount of an annuity of 1 per annum for "n" years is

$$A. = \frac{(1+R)^n - 1}{R}$$ hence the amount of an annuity "P" per annum for "n" years would be

$$A_p = P \times \left[\frac{(1+R)^n - 1}{R} \right]$$

Solving for P (to find the size of the annuity necessary to build up the fund to pay off the *predetermined* debt (or cost of the building), we have

$$P = \frac{A_p}{\frac{(1+R)^n - 1}{R}}$$

clearing fractions

$$P = A_p \left[\frac{R}{(1+R)^n - 1.} \right]$$ Now assuming $A_p = 1$

$$(20) \quad P = \frac{R}{(1+R)^n - 1}$$ or (sinking fund factor).

Another way to look at this problem is that if the amount of an annuity of 1 per annum is

$$A = \frac{(1+R)^n - 1}{R}$$ (see equation 12)

then the annuity necessary to produce this amount would be its reciprocal or

$$P = \frac{R}{(1+R)^n - 1} \quad \text{(equation 20)}$$

This is called the "Sinking Fund Factor" or "Sinking Fund Rate" and will be referred to as "Sfr."

The finding of an unknown quantity which will produce a *required amount* is the (reciprocal) of determining the amount accumulated by a *known annuity.*

Example

If annual payments of 1 for 5 years at 4% compound interest will amount to 5.41632256 what annual payment is necessary to amount to 1 in 5 years @ 4%?

Obviously it is 1 divided by 5.41632256 or .18462711.

AMORTIZATION

Amortization may be defined as the extinction of an interest bearing debt, *now due* (principal and interest), by a series of equal periodical payments. It is more often desired to know the payment necessary to amortize a *known debt* at a given rate during a definite time than it is to know what debt will be amortized by a given payment.

There is a close relationship but a decided difference between amortization and sinking funds. They both extinguish a debt—*but by different methods.* Amortization payments are payments to extinguish a debt *now due* while payments to a sinking fund build up to pay off a debt due *at some future time.* Amortization *extinguishes a debt* while a sinking fund *creates an investment.* Suppose we analyze them arithmetically.

Example:

A debt of 1000 is to be paid in 5 years at 5% compounded annually

I. SINKING FUND
(Principal due 5 years hence)

Period	Payment	Interest 5%	Increase	Accumulation
1	180.97	....	180.97	180.97
2	180.97	9.05	190.02	370.99
3	180.97	18.55	199.52	570.51
4	180.97	28.53	209.50	780.01
5	180.97	39.02	219.99	1000.00
Total	904.85	95.15	1000.00	.....

II. AMORTIZATION
(Principal due now)

			Distribution	
Period	Principal	Payment	5% Interest	Amortization
1	1000.00	230.97	50.00	180.97
2	819.03	230.97	40.95	190.02
3	629.01	230.97	31.45	199.52
4	429.49	230.97	21.47	209.50
5	219.99	230.97	10.98	219.99
Total	.....	1154.85	154.85	1000.00

The sinking fund payment is the principal of the debt divided by the amount of the annuity.

$$\text{Hence } \frac{1000}{5.5256} = 180.97$$

The amortization payment is the principal of the debt divided by *present worth* of an annuity of $1.00.

$$\text{Hence } \frac{1000}{4.3294} = \$230.97$$

The above schedules show (1) that the sinking fund and the net amortization increases each period by the same amount and (2) that the *total interest cost* is the same, for in the sinking fund:

Interest paid on principal is.....$250.00
Less interest earned by sinking fund 95.15

Is the amortization interest paid or $154.85

Since a debt of P.W. can be amortized by a series of (n) payments of 1, then a debt of 1 obviously can be amortized by a series of (n) payments of $\frac{1}{PW}$

From equation (16b) we have seen that

$$PW = \frac{1-\left(\frac{1}{1+R}\right)^n}{R}$$

(21) Hence $$\frac{1}{PW} = \frac{R}{1-\left(\frac{1}{1+R}\right)^n}$$

$$= \frac{R}{\frac{(1+R)^n-1}{(1+R)^n}} \text{ or}$$

(22) Amortization payment or factor

$$= Z = \frac{R\,(1+R)^n}{(1+R)^n-1}$$

Now refer back to equation (17) and it will be seen that the formula to find the amount of the amortization payment is the reciprocal of the formula for the present worth of an annuity.

Also by following equation (17) backwards through the simplification stages of equations (16b) and (16a) we see that by dividing both numerator and denominator of this fraction

$\frac{R\,(1+R)^n}{(1+R)^n-1}$ by $(1+R)^n$ we have

$$\frac{R\,(1+R)^n}{(1+R)^n-1} = \frac{R}{\frac{(1+R)^n-1}{(1+R)^n}} \text{ or } \frac{R}{1-\frac{1}{(1+R)^n}}$$

By referring back to equation (7) we see that the denominator of this latter fraction is the formula for the compound discount of 1.

Hence the

Amortization payment = $\frac{\text{Rate}}{\text{Compound discount of 1}}$

These latter manipulations are only given here to show the *very close relationships* between *all* of these formulae *where only one interest rate is shown* and to show how the result desired can be obtained from one or two other sets of tables if the appraiser does not happen to have at hand the table desired. In our discussion of the formulae for the Present value of an annuity (17) (The Inwood Formula), we stated that this formula masked the fact that the "risk rate" (R), was used twice, both for the *simple interest* on the investment and as *compound interest* and that it was foolish to expect to be able to safely compound interest at 8%, 10% or 12%.

More complicated mathematics are involved in the introduction of a second interest rate (r), the "safe" or compound interest rate. This shows how a formula can be built up *which will much better serve our interests in appraising real estate correctly* in that the investor can, if he desires, get 6%, 8%, 10%, 12% or any other desired return on his investment at *simple interest* and also get 2% to 4% *compound interest* on the reinvested portion.

The fair minded appraiser is here asked a few pertinent questions:

(1) Do you know any speculative investment where 10% or 12% cannot be obtained?

(2) Do you believe 5% or 6% compound interest *can* be obtained on any safe investment for a long term?

(3) Do you believe 3%, 3½%, or 4% (not tax exempt) is an adequate return on a real estate investment, considering the risks? In other words, would you loan money on a mortgage or trust deed at these low rates?

It is obvious that the answers to all of the above are NO! Also that an investor is warranted in asking a return on his investment at simple interest of 6% to 10% or 12% or more (depending on the

amount of risk he takes) and that he is not warranted in asking 10% compound interest, which is *impossible* to get.

It is evident, therefore, that intelligently to evaluate a long term lease or a mining or a timber property (which have wasting assets) that he *must* use two interest rates, a "risk rate" (R) and a "safe" rate, or compound interest rate (r).

When a sum of money is invested the investor expects to receive interest at a stipulated rate at the end of each year on his investment and he also expects to have his original investment returned to him at the end of the term of the loan.

There are, however, some forms of investment where the original capital is *not* returned to the investor. In such cases provision must be made for the return of the capital *by setting aside a portion of the annual income as a sinking fund to build up to the amount invested when it becomes due.* Typical examples are investments in buildings which wear out, or mines and timber land which when worked out have no value. The mining engineer or timber man estimates the amount of ore or timber that can *economically* be removed, the cost of getting it to market, and the rate at which it probably will be removed, or, in other words, the length of time it can be operated before depletion. The appraiser estimates the net income, how long it will continue and the cost of the structure (or the investment) which is to be paid back.

The *net* annual income is the rent of an annuity; and the value of the mine, timber tract, or real estate is the present value of the annuity. From *net* the income at the end of the year the investor will take out his interest at the simple interest or risk rate, (R), and the balance will be the annuity that is to build up the sinking fund at a lower "safe" or compound interest rate, (r), and this fund *must, at its maturity equal the original investment.*

Suppose, then, that

C = cost of building
R = speculative or simple interest rate
r = "safe," compound or sinking fund interest rate
n = period (years)
I = income (yearly)

Then:

I − C R = the payment going into the sinking fund. From formula (12) we have seen that $\frac{(1+r)^n-1}{r}$ is the amount that an annuity of 1 will produce in "n" years at rate (r). Hence

$$(I-CR)\left[\frac{(1+r)^n-1}{r}\right]$$

is the amount that an annuity of (1 − CR) will produce in (n) years at rate (r).—and this from our hypothesis must at its maturity equal C, hence:

$$C=(I-CR)\times\left[\frac{(1+r)^n-1}{r}\right]$$

Now let us assume that the income I is 1. Then the amount that an income (or annuity) of 1 will produce if the simple interest, (R), is first deducted will be,

$$C=\frac{(1-CR)\ [(1+r)^n-1]}{r}$$

clearing fractions

$$Cr=(1-CR)\ [(1+r)^n-1]$$
$$=[(1+r)^n-1]-[CR\ (1+r)^n]+CR$$
$$Cr+C\,R\,(1+r)^n-CR=(1+r)^n-1$$
$$C=\frac{(1+r)^n-1}{r+R\,(1+r)^n-R}$$
$$=\frac{(1+r)^n-1}{R(1+r)^n-(R-r)} \qquad (23)$$

which is the *Hoskold formula* or it is the amount that an annuity of 1 will produce if simple interest at rate (R) is paid on the investment and a sinking fund is built up at rate (r) to liquidate the investment at the end of the term.

HOW TWO RATES ARE MASKED

Now suppose that both interest rates are the same or ; R = r. Substituting either in the above formula (23)

Amount of an annuity of 1

$$= \frac{(1+r)^n - 1}{r(1+r)^n - (r-r)}$$

$$= \frac{(1+r)^n - 1}{r(1+r)^n}$$

Which is the same as formula (17) the Present Worth of an Annuity or 1 or the Inwood Formula which is conclusive proof that the Inwood Formula contemplates the use of two interest rates which are the same or that this rate is used twice.

Now: Rearranging the denominator of formula (23) slightly we have

$$X = \frac{(1+r)^n - 1}{R(1+r)^n - (R-r)}$$

$$= \frac{(1+r)^n - 1}{R[(1+r)^n - 1] + r}$$

Divide numerator and denominator by $(1+r)^n - 1$ and

$$X = \frac{1}{R + \dfrac{r}{(1+r)^n - 1}}$$

From equation (20) we see that

$\dfrac{r}{(1+r)^n - 1}$ is the sinking fund factor "Sfr" at compound or safe interest rate r—hence Hoskold's formula may also be written

$$X = \frac{1}{R + \text{"Sfr"}}$$

HOSKOLD'S FORMULA CAN BE DERIVED BY ANOTHER METHOD

Suppose as before that:

C = Cost or amount of investment to be returned at end of term.

I = Net annual revenue or income.

n = Term or the life of the property in years.

D = Depreciation charge or the amount deposited annually in the sinking fund which accumulates to the amount, (C) at the end of (n) years.

R = Simple interest or "risk" rate to be returned on the investment (C).

r = Compound interest rate at which sinking fund is to accumulate.

A_c = Amount of an annuity of 1 per annum at rate r.

$= \dfrac{(1+r)^n - 1}{r}$ – see formula (12)

Remember that the annual income (I) is E X A C T L Y sufficient to pay simple interest on the investment (C) at the rate (R) and to accumulate a sinking fund at compound interest rate (r) to repay the investment at the end of (n) years.

Suppose, as in most appraisals, we wish to determine the value of the improvement (in this case the cost of the improvement —or the warranted purchase price) and that the buyer desires simple interest on his investment at rate R and he is able to invest the sinking fund payments at compound interest at rate (r). The net income is known. We will suppose it to be $1 per annum.

Then:

C = D × (amount of an annuity of I at rate r)

$= D \times A_c$ or

$$D = \frac{C}{A_c} = C \times \frac{1}{A_c}$$

Also

The annual interest on (C) at rate (R) is CR and since the income (I = 1) must equal the interest on Capital plus the depreciation charge

$$(I \text{ or } 1) = CR + D$$

$$= CR + C\frac{1}{A_c}$$

$$= C\left(R + \frac{1}{A_c}\right) \text{ Then}$$

$$C = \frac{1}{R + \frac{1}{A_c}}$$

Referring back to formulas 12 and 20 we see that the term $\frac{1}{A_c}$ is the reciprocal of the amount of an annuity of 1 at rate r, or is the sinking fund factor at rate r.

Substituting this value of $\frac{1}{A_c}$ we have

$$C = \frac{1}{R + \frac{r}{(1+r)^n - 1}} = \frac{1}{R + \text{"Sfr"}}$$

$$\frac{1}{\frac{R[(1+r)^n - 1] + r}{(1+r)^n - 1}}$$

Clearing fractions

$$C = \frac{1 \times [(1+r)^n - 1]}{R(1+r)^n - R + r}$$

$$= \frac{(1+r)^n - 1}{R(1+r)^n - (R-r)} \text{ which is}$$

Hoskold's formula as given before.

The simplest way to use this, however, is not by direct substitution into this long formula but by use of formula (24) which is much shorter and simpler as values of "Sfr" are included in nearly all tables.

Finally, the valuator must be warned that appraisals *cannot be made by formulae.* An appraisal is an opinion of value (since values of real estate cannot definitely be determined) and the value of *anyone's opinion on anything is only as good as his judgment.*

Formulae are simply and only an aid to the appraiser in forming a good judgment and they certainly are no aid if not understood; they are the exact reverse.

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The Appraisal of Industrial Property

By K. LEE HYDER, M. A. I.

I CONFESS to some timidity in speaking to your Division upon a subject as broad and as controversial as "The Appraisal of Industrial Property." Hardened, however, by the experience gained in many campaigns prior and subsequent to the creation of the American Institute of Real Estate Appraisers, I can approach with some assurance certain of the fundamental aspects involved and perhaps avoid the more hazardous and controversial issues.

In fact, I am going to treat the subject as a practical and common sense problem that is facing those interested in industrial properties and steer as far away as possible from academic and theoretical discussion. The basic concepts of *value*, its relation to *price*, and the rise and fall of *money* and *credit* present a fascinating and intricate study, but one that apparently will never be finished. You may rest assured that I am *not* going into that.

In this year 1934 we appear to have become a Nation of appraisers, and *value* has taken on a decidedly ephemeral character. With our rubber dollar and our elastic price structure, appraisals have an unfortunate habit of bouncing back at us. Our radio comedian, Ed Wynn, said not long ago that he had been getting so many "rubber checks" that he had taken to making his bank deposits with a tennis racket. Perhaps that might be a convenient method to adopt in submitting current appraisals.

WHAT IS AN INDUSTRIAL PROPERTY?

It is of first importance that we understand basically just what is implied by "industrial" property and to distinguish between this and an "investment" or other type of property. Again, setting aside any technical theories, an industrial property may be defined (at least for the purpose of this discussion) in its limited physical sense as:

> "The land, fixed improvements, machinery, and all equipment, fixed or movable, comprising the plant with which a business is being conducted for the manufacture and marketing of finished products from raw materials."

The above definition infers the carrying on of a business enterprise which uses the property simply as a set of tools essential to this end.

A carpenter is a mechanic skilled in the trade which he follows. To execute his work, however, he must have the necessary lumber, nails, and other materials. In addition, he must have a complete set of tools; and to do the work efficiently and completely these tools must be of good make and maintained in good condition.

In the same manner the manager of a manufacturing enterprise is skilled, we will say, in producing a certain product. But to carry on manufacturing operations successfully and properly his tools (that is, the plant) must also be suitable and maintained in good serviceable condition. The carpenter may require several kinds of saws and planes, but rarely needs more than one hammer. Likewise the manufacturer, while requiring a full complement of tools and even a few spares for emergency, does not need more than can be efficiently devoted to the work.

As distinguished from this, an investment property is in itself a business enterprise. The product of an office building, for example, consists of the use of a certain number of square feet of office space,

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Mr. Hyder delivered this address before the Industrial Property Division of the National Association of Real Estate Boards at Minneapolis on June 27, 1934.

plus the related services offered therewith. This distinction leads naturally to the most important point to keep in mind in considering the value of an industrial property; namely that whereas the value of a business in its broadest sense would be established by the net earning capacity at a rate of return commensurate with its hazards and expectancy of continuity, such value would include not only the physical plant devoted to the business, but all other factors incident to the product, management, and established good will of the company.

Now, it may be seen that the value of a business might vary over a wide range, depending upon the particular enterprise, factors of competition, and general economic conditions; whereas the value of the physical plant used in conducting the business is subject to more definite limitations reflected primarily by the actual cost of duplicating the facilities in their present condition for continued use.

Assuming, however, that the enterprise itself were unsound or unprofitable, the value of the plant facilities might be reflected simply as the price that could be obtained on the open market for the land, and the salvage or scrap value of the equipment.

Again, as opposed to this, an "investment" property might have a value consistent with the cost to reproduce the property as of a certain date and under certain given conditions. This would be true if the profits from operation were sufficient to justify such figure. On the other hand, a reduction in the net rentals and returns may reflect a value in the property substantially less than its investment but which would not necessarily contemplate the actual abandonment of the property and its dismantlement and sale.

With these premises in mind we may classify the tangible portion of an industrial property into two divisions: first, the real estate, comprising the land, buildings, and other structural improvements; and secondly, the equipment that is devoted to the manufacturing process. Under such classification the *value* of the physical property may be predicated upon two distinct bases, as follows:

1. As a part of the assets of an established going concern for continued utilization for its highest and best use; that is, for the purpose for which it was originally designed or is currently adapted. Its value upon this basis might properly be designated as "sound value to a going concern."
2. As a group of related or unrelated assets susceptible to disposal as an entirety or as independent items (each for its highest utility) but not for continuation of use in operation as a part of a going concern.

It is obvious that basically the value of an industrial property may therefore depend upon the potentialities of the business itself. However, where an appraisal is on the basis of a value to a going concern, it is not considered that the net earnings from the operation of the business have any direct relation to the value of the property. The earnings do influence the stability or otherwise of the business itself, and to such extent indicate in a broad way the probability of the continuance of the plant for the present or similar use.

The rate of return in a certain industrial enterprise is usually developed from factors of competition and is dependent largely upon the hazards to the capital invested therein. It is essential that these earnings be sufficient to provide a return not only upon the real estate and equipment installed in the plant, but also upon the working capital invested in cash, materials and supplies, and merchandise inventory. Furthermore, a portion of such earnings must logically be attributed to the ability of the management and the intangible assets, such as patents, trade

names, advantageous contracts, and the established good will of the public.

Now, a certain business might be showing net profits, we will say, of six per cent upon the investment in the physical property, but, if this were substantially less than is generally anticipated from all capital invested in this type of business, then it would be obvious that the company is not in a favorable condition in spite of the fact that a fair return is being made upon the plant investment.

Furthermore, a plant might be entirely shut down and no earnings whatever available. The plant itself, however, would have a value, undoubtedly less than the "sound value to a going concern," but not limited or measured directly by the current lack of earnings from manufacturing operations.

It may be generally stated, therefore, that net earnings are to be used solely as a guide to the stability of the enterprise itself, and not in any manner for purposes of measuring the value of the physical property comprising an industrial plant.

THE INDUSTRIAL APPRAISAL OF 1934

The industrial appraisal of 1934 is far more than a valuation of the property. It is in itself one of the important tools needed in the conduct of a business; it furnishes the base for the control of cost and plant accounting, including insurance, taxation, and—perhaps of greater importance—of accounting for depreciation. In fact, under the exacting demands that are placed upon business today, it is virtually imperative that adequate property control be established or a corporation cannot meet competition and, furthermore, cannot accurately provide the various types of information to all of the Government authorities and bureaus which are being created for the regulation and control of industry.

We look back today on the year 1933 with considerable doubt as to the final outcome of the unprecedented legislation that was brought about during that year. The Securities Act of 1933 is still causing a great deal of discussion and has placed a heavy restraint on the financing of industry. No doubt this Act was conceived as a necessity for the protection of the public against a repetition of unfortunate banking practices. Perhaps, when and as it is revised along certain lines, it may accomplish such purpose. In the meantime it has been virtually impossible for an industrial enterprise, unless fortunate enough to have retained a substantial surplus, to obtain private funds either for the retirement of existing indebtedness or for the changing over of the plant facilities for efficient operation under restricted production demands. This condition has resulted in many corporations applying directly to the Government through the Reconstruction Finance Corporation in order to obtain essential capital. In either case the showing of the *value* of the collateral for the loan is of the greatest importance and must be presented in provable form by disinterested authorities.

The modern appraisal, therefore, designed to meet all of the problems facing the business executive, must be sufficiently flexible to cover the internal operating requirements as well as to present a complete and accurate picture of the plant assets and their potentialities for purposes of financing, taxation, and many other external demands.

The determination of the fixed charges resulting from the ownership and operation of plant facilities has taken on, thereby, the utmost importance. It has been said that the greatest menace to property is depreciation, fire menace being a close

second. Modern cost and plant accounting stresses "depreciation" as a definite cost of the manufactured product whereby a certain portion of the plant facilities are used up in the manufacture of the product, just the same as other raw materials are so used. Furthermore, a correct and positive statement of income, expense, and profits demanded for a financial statement cannot be obtained without including an analysis of the property expense as between pure maintenance, property replacement, and added capital—again a property matter and dependent primarily upon the "base" set up through a proper statement of plant assets.

The modern appraisal, therefore, must be prepared in a form which will permit the determination of all of these facts as well as to establish a valuation of the property, whether this be for the reconstruction of the balance sheet, for financing, or for actual purchase and sale.

Now, obviously the *values* which may be developed for the physical property comprising an industrial plant may vary for different purposes. In establishing adequate insurance coverage, for example, we are not concerned with the land or any of the assets which are not subject to fire or other similar risk; furthermore, the degree of utilization of any particular unit of property is not vitally significant in establishing its "insurable value." The intent in writing the insurance is to protect the owner from loss by the substitution of a monetary consideration presumably sufficient to indemnify him and to permit the replacing of the property values destroyed. It is not customary, of course, to insure the property for its full cost of reproduction new, and an allowance is made for any actual physical deterioration.

For practically every other purpose the most important consideration in laying out the appraisal of an industrial property is to establish basically the expectancy of use to which such property is to be devoted in the immediate future. Prior to the current industrial depression the general tendency was toward the expansion of industrial facilities. It is true that the average business mortality rate was high and many plants were constructed and lay unused or were turned over to meet new demands when the business failed. As a whole, however, the expansion was continuous, not only in an outward direction in increasing capacity, but also internally in the scrapping of equipment far in advance of its useful life and the installation of more modern equipment capable of increasing production materially with less actual labor.

This process in one sense is still continuing, but nevertheless in a broad way the tendency at the moment is toward the contraction of all lines of business and therefore we find an excess plant capacity now constructed and existing throughout the country. This means in many instances that the more profitable corporations of the past now find that the investment in plant facilities is far out of proportion to their current or immediate future needs, and in consequence the carrying charges are an excessive burden and place the company in a difficult competitive position.

This brings us to the underlying purpose of the modern appraisal prepared to meet every need of an industrial corporation; that is, to determine its "value for use." If the property, for example, has a tract of land of greater size than would provide for current needs and reasonable future expansion, then such excess should be treated and valued simply as an "investment" at the "market price" that it might bring just as outside holdings of stocks and bonds or other assets might be treated in the balance sheet of the corporation.

The same would hold true in the case of the plant facilities, that is, the buildings and the equipment installed for manufacturing purposes.

In other words, as fundamental to any modern appraisal we must contemplate the setting up of the property in accordance with its "value to a going concern," whether or not it is to be continued in use for its present purpose and in its existing location.

This approach brings about certain factors which tend to complicate the appraisal very materially. It is easy enough in principle to determine that the facilities comprising a certain plant are actually capable of producing fifty per cent more than the business itself could anticipate for the future. Theoretically we could then state that fifty per cent of the plant should be abandoned and that it is worth no more than it might bring if offered at forced sale upon the open market.

Practically, however, the plant might be generally too large and over-equipped in many departments and the future operations would therefore have to bear carrying charges on such excess investment even though the "value" might be written down to the active percentage of the property only. This raises a difficult problem in the setting-up of accrued depreciation on the plant facilities and justifies a further reduction in the value in proportion to the increased property expense occasioned thereby.

PRACTICAL APPROACH TO THE APPRAISAL PROCESS

Assuming that the company is a going concern with a business that is more or less profitable, then the valuation of an industrial plant, that is the physical property, should be upon the basis of its actual worth to the company for continued operation. This value would not, however, consist simply of the value of the land plus the cost of the improvements, less some nominal or arbitrary deduction for depreciation based upon the age or remaining life expectancy of the respective units; but should rather comprise an honest and intelligent attempt to measure the plant's utility and condition for actual continuity in service. I believe the best formula—if we could put such an investigation upon the basis of a formula—would be to start with the valuation of the land, based upon comparative sales, transfers, etc., consistent with all other lands and with due regard to the factors of location, utility, and assemblage; then establish the reasonable cost of reproduction of the improvements and equipment through an actual detailed count and inventory of the items, arranged in logical sequence and orderly form by plant divisions and property classifications; and thereafter study the plant to establish the depreciation from three separate points of view, as follows:

1. Obsolescence—Functional and Economic.
2. Condition and Deterioration.
3. Relative Desirability.

The cost of reproduction of the improvements and equipment should be established upon what might be termed a *current normal base*. During a period of wide fluctuation in material and labor prices so-called "spot" prices might not be a proper measure of the reasonable cost of duplication, in which case a trend or, we might say, expectancy for the immediate future would be a more accurate point of view to adopt. In any event, and regardless of the ultimate "value" that would be determined, the *normal cost* of the facilities, especially those which are depreciable, is essential to property control and the establishing of fixed charges (and consequently the potentialities from operations) and must therefore be determined.

Now, an industrial plant is a complete

property consisting of innumerable items, and to prepare the inventory and establish the cost of reproduction new is not a one man job. To do this work intelligently, specialists in many lines are required, if the items are to be positively identified and accurately described and priced. A man experienced in a certain type of industrial property might spend an hour, a day, or a week at a manufacturing plant and thereafter render an opinion of what he believed to be the utility value of the property. This would not in any sense, however, constitute a modern "appraisal."

In order to be equipped to express an opinion that could be substantiated it would be necessary for this appraiser to assemble a staff of experienced men with knowledge of all of the different items and elements that go into the making-up of the property. This staff would accumulate the facts, perhaps spending many weeks of time in so doing. The working papers and field notes would thereafter have to be analyzed; bills of quantities developed; unit prices established; quotations obtained on various types and classes of equipment; and freight, cartage, and installation costs investigated; all of which brings about the necessity for a substantial and well-equipped organization. These same investigators must not only compile accurate descriptions but must inspect the individual items to determine the physical condition and the particular place each item holds in the manufacturing process.

The inventory so prepared, with accurate current costs applied, then becomes the appraisal inventory. This must thereafter be analyzed to determine the accrued depreciation, with consideration to all factors involved, including obsolescence (whether resulting from changes in the art, modernization of process, or from general economic conditions) and deterioration, as compared to a new item of similar kind.

With this accomplished we would have the cost of reproduction less depreciation of all of the items comprising the manufacturing plant facilities and would be in a position to consider the value of the property generally by segregating the facilities into two divisions, as follows:

1. Property required for a continuity of use, at the cost of reproduction less depreciation including obsolescence.
2. Property not required, to be written down to the price it would bring on the open market.

Now, suppose it were found that twenty-five per cent of the physical property, including the land, was not used or required in the normal carrying on of the current or expected volume of business and that its value had been reduced accordingly. This excess could not well be eliminated without destroying some of the plant that *was* required, and as a result would have to be maintained and the costs of so doing of necessity reflected in operations. Naturally the company would be better served by a new plant of perhaps smaller dimension and different layout. An intelligent purchaser desiring to buy this plant would consider this particular factor and, to the extent that his operating expense would be greater, would discount the price he would pay for the plant. In other words, we inject an additional factor into depreciation; that is, the loss in value of the manufacturing plant not recognized through obsolescence or over-capacity but resulting from forced uneconomical operation of excess facilities.

A year or two ago my company was called upon to appraise a large packing plant in Minnesota for tax assessment purposes. This plant was built beyond real needs as a war project and had never been used to capacity and probably never would be. However, it was of the highest type

of construction and layout, and modern in every respect. In one sense there was no obsolescence, but there was a large overcapacity that was susceptible to demonstration.

The Minnesota Supreme Court ultimately passed upon the value established in this case and approved the principle of discounting the value by virtue of the excess expense incurred in operation. The Court decided that not only the excess capacity of the plant must be deducted, but that additional recognition must be given to the excessive operating cost, and the value of the plant reduced accordingly. In this connection it is again emphasized that the plant is considered herein simply as a set of tools used by the company in carrying on its business.

Up to this point I have made no more than a brief reference to one of the most important phases of the appraisal and one in which I know you are particularly interested and more or less constantly engaged. I refer to the appraisal of land.

Now the primary reason for breaking an industrial property into its elements by a detailed appraisal inventory is to obtain a definite market price. It is seldom that a complete plant has a determinable market price, at least that may be provable upon the basis of its economic use or utilization. Piping, however, of various sizes and grades has a market price. So has standard machinery. The proper price for a building cannot be directly measured with any certainty, but the building can be reduced to its elements of brick, steel, lumber, and labor, and the assembled market price determined. The plant must be built up through a quantitative and qualitative analysis with units determined by the ton, the thousand, the hour, or by the individual item.

In the appraisal of land however, we encounter an item of property which not only has no exact market price of itself but also is not amenable to direct reduction to elements that do have a market price. True, we have the units of measurement, such as the acre or the square foot through which our value may be ultimately presented and interpreted, but the unit price itself is an indeterminate element excepting as a part of the whole. Recognizing this difficulty it is nevertheless equally important that the appraisal of the land develop and present evidence for its substantiation.

As in court procedure, in the absence of direct evidence, that which is circumstantial in character but reasonably conclusive must be adopted. It is a question of presenting basic facts and the drawing of logical conclusions therefrom. There are too many conditions that affect the value of land forming the site of an industrial property to attempt to cover in this discussion, and it will probably be sufficient to suggest simply a few of the essentials with which you are undoubtedly fully familiar.

The sound land appraisal should, in my opinion, start with the assembling of all possible data on actual sales and holding prices of land as similar as possible to the site under appraisal. Knowledge must be had as to the conditions which may have influenced such sales and of changes that may have taken place in the situation since the transactions were consummated. The specific property must then be studied and comparisons made that may be favorable or unfavorable with the data obtained. The site may hold strategic advantages that make it more desirable than surrounding land, or it may lack those advantages possessed by others with which it is being compared. There are factors of size and shape, physical characteristics, and availability or otherwise of rail and local transportation. The site may be in

a congested area where the question of "assemblage" would be important and perhaps add materially to the value of a unified tract, or it may be "zoned" for a certain use which gives it greater or less utility and value.

The important point is that the land appraisal should not be simply a statement of opinion but should set forth the facts and reasons for such opinion. The value should be demonstrable insofar as practicable. Furthermore, the land appraisal should be prepared and presented in a form which will adapt itself to analysis and intelligent study when considering the potentialities and value of the property as an entirety. Surplus or inactive land may readily constitute an asset and be a definite part of the property and its value, but any amount beyond the limits of reasonable expansion requirements may possess a lesser value at sale and hence to the corporation as a going concern. Under such conditions, in the modern appraisal, it may in effect be given a different utility and a different value upon the appraisal balance sheet.

FORM AND SET-UP OF APPRAISAL REPORT

With all of these different elements to consider, the appraisal report that will fully and satisfactorily set forth the underlying conditions and the essential details becomes a ponderous document. It is most imperative, therefore, that every effort be made that the report be clear and arranged in an orderly form. The best practice would demand the setting-up in a condensed introductory statement the basis of appraisal; the methods and principles used in its preparation; the inclusions and exclusions from the property; the date of inspection and inventory; the price base adopted; and a summarization of the appraised costs and values. This should be followed by a descriptive report of the property which might embrace to some extent a discussion of the business enterprise itself. Naturally the purpose of the appraisal will determine to what extent such aspects are to be presented.

The report should include complete itemization of all units of property, starting with a description of the land itself and covering both the physical and the economic factors pertinent to the determination of its utility and value.

The appraisal inventory of the improvements and equipment should be in such form and detail as the purpose demands, but in any event should constitute a complete record of the property items, their location, and a description sufficient for *actual* identification. Ordinarily this appraisal inventory should be priced at the cost of reproduction new, and—in some cases and for certain purposes—on other bases such as the "original cost" or the "March 1, 1913," prices which would be required when computing depreciation for Federal Income Tax purposes.

The complete report should include adequate plats and maps, and supplementary statements and summaries adapted to insurance purposes; depreciation schedules and rates; and in some instances an analysis of plant maintenance and other property costs for use of the accountants in the reconstruction of statements of profit and loss.

It would be entirely proper and usual to set up in the letter of transmittal or certificate the "cost of reproduction new" as determined, the extent of the "accrued depreciation," and the opinion of the appraiser upon the *value* of the property. The *value* should be definitely qualified as to what the appraiser means; that is, whether it represents his opinion of the "sound value to a going concern for continued utilization," or its "value at sale."

It is of particular importance that every

appraisal of an industrial property should state clearly the inclusions and exclusions. Ordinarily we would have, for example, the "direct construction costs" which would include all material, labor, and equipment required in the duplication of the plant facilities. If the entire cost is to be determined we would also have to consider the "indirect construction costs"; that is, the charges that are normally incurred in the construction of any property, such as engineering and superintendence, taxes, insurance, interest, and administrative expense not assignable directly to specific property items. There is then the question of whether or not "intangible property" is covered or discussed in the report. An appraisal might be made, for example, to cover simply certain patents under which the company is operating, or it might be broad enough to cover all intangible assets, which in turn would require a complete industrial investigation and analysis of the plant operations and profits anticipated from future business. Furthermore, the inclusion or exclusion of materials and supplies, product inventory, or other working capital items should be definitely covered.

As stated in the beginning, this discussion is directed primarily to the appraisal of the physical properties and this reference to intangible and other assets is simply for clarification in discussing the preparation of the appraisal report.

It cannot be too strongly accented that the inventory of the property and the costs as determined be set up by property divisions and classifications in order that depreciation and other fixed charges relating to property may be accurately computed. This results in bringing in a definite and continuing utility to the appraisal that is not possible where simply the "value" of the property is established.

RECENT DEVELOPMENTS

You may or may not be familiar with the various movements that are under way to educate the public generally in sound appraisal thinking and practice, although you are fully informed as to the progress made by the American Institute of Real Estate Appraisers in that specialized field. That some real results are emanating from all of these efforts speaks well for the ultimate stability of our entire industrial system, upon which, of course, our future valuations must rest.

Last November a group of individuals representing a number of the outstanding engineering societies and other organizations interested in appraisal practice and procedure gathered together in Washington and created the "Conference on Appraisal Practices." Since that time various meetings have been held and considerable progress made primarily for the purpose of developing recommendations and standards of practice for presentation to Government Bureaus with the idea of assisting such Bureaus in laying down sound regulations pertinent thereto.

About the same time a group representing the public appraisal organizations of the United States formed an "Association of Appraisal Executives." This latter movement apparently is of a broader scope and contemplates ultimately the formation of an Institute or Society of Public Appraisers. For the time being the efforts of this association have been directed primarily toward the gathering and exchanging of ideas and the building up of a sound groundwork upon which such an organization may be established.

Representatives of this group have also been in attendance and active on committees of the "Conference on Appraisal Practices." Altogether this activity is most encouraging. These movements are

being carried forward at the moment under what appears to be increasing difficulties, and we can see the agitation toward the elimination of "profit upon capital." Those identified with the more radical schools of thought are having their innings just now—and we must admit they are in the ascendency.

And how does all this affect the valuation of industrial property? I do not know; in fact I doubt if any one does or will know until we have reached a period of greater economic stability.

From the standpoint of the practical appraiser, however, the present results are simply to place more and more stress upon the necessity for complete, accurate, and definite reports that will provide all of the facts for an intelligent understanding of the property and its potentialities.

The various members of the "Conference on Appraisal Practices" seem to be in agreement that the appraiser, particularly where the report is to be used for financial purposes, be able to demonstrate his competence and experience and his disinterestedness in the business under investigation, the property being appraised, and the results contemplated.

If it were to accomplish nothing else, it would appear that such results would have made the Conference worth while. The recognition and demand by the Public for thorough, informative, appraisal reports that can be substantiated, just the same as a statement of audit on manufacturing operations, is essential to the expansion and rehabilitation of industry; and the laying down of proper standards of practice by those engaged in the many phases of appraisal activity will be a long step toward this end. As members of the Industrial Property Division of the National Association of Real Estate Boards you are in the strongest possible position to further these efforts, having already attained a real measure of public confidence.

Summing up the discussion, it is believed that in any consideration of the appraisal of industrial property, and no matter for what purpose, it is increasingly evident that the basic essential is a scientific inventory of the tangible property units assembled and summarized in a logical manner.

The building up of actual technically identified property units; the determination of provable costs; and the assembly of such costs into proper classification in understandable, usable form, is a science in itself and one upon which I might speak for hours.

The "Industrial Appraisal of 1934" is one in which the so-called "opinion appraisal" must give way to the coordinated "appraisal report." The varied nature of the problems and the necessity for many different types of human talent and statistical references, even on the smaller type of industrial property, make this true.

The opinion of an individual upon the value of industrial property can be worth no more than his ability to substantiate such conclusion. If this opinion is arrived at by the accumulation of complete and accurate facts, and through the cooperative effort of others trained to assemble such data, then the judgment of the appraiser can be better exercised and he may feel confident that the basis for his valuation is factually provable—and his ability and disinterestedness is strengthened accordingly.

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Appraising Property Zoned for Business

By GEO. H. COFFIN, JR., M. A. I.

IT was a wise man who said "you cannot make a velvet purse out of a sow's ear." Neither can you make business property out of subdivider's illusions, deed restrictions, or zoning classifications. Sound economic forces create the relatively limited frontage of any city which can profitably be devoted to business use. Unfortunately, most of the so-called business frontage was born of the wedlock between ignorance and speculation. The naked miles of vacant lots along our arteries of travel are mute testimony to an economic waste of such proportions that the imagination is startled at the farce of perpetuating this needless waste into the eternity of tomorrow.

In sixty percent of the area of Los Angeles City which is now zoned, there are 600 miles of frontage zoned for business use exclusively, a staggering frontage equivalent to 126,831 lots with an average frontage of 50 feet each, equal to the distance from Los Angeles to the Arizona line and then across the state of Arizona to within ninety miles of New Mexico.

A careful calculation discloses that not exceeding 14½% of this frontage is actually improved with business structures. In the entire City of Los Angeles, zoned and unzoned areas, there are 21,638 business structures of all kinds from office buildings to service stations. It is conceded that a minimum of 85% of these buildings are located within the 60% of the area which is zoned. We all recognize the fact that a large portion of the 14½% occupied frontage should never have been improved for business. The mere presence of business buildings on thousands of lots already improved does not warrant the conclusion that the land so occupied ever was, is, or ever will be business property. The financial heartaches of the owners and mortgagees of such misplaced investments can attest to this truth. This leaves 85.5% of the zoned business frontage vacant, most of which is permanently committed to enduring idleness unless curative measures are adopted, and this can only be done through the medium of education.

We seem to forget that this vacant frontage has never yet been used since the dawn of creation except for farming. We live on the eternal hope that some magic is going to change all history and send responsible tenants madly competing for retail space in our goat pastures, which in 60% of our city consists of the equivalent of approximately 108,500 vacant 50 foot lots zoned for business.

Ten typical districts containing vast frontages dedicated to idleness have been studied, where front foot prices—not values—run from $25.00 per front foot to $300.00 per front foot. This study produces an average asking price of $150.00 per front foot. Applying this modest figure to the 108,500 lots, we reach the staggering and stagnant total of eight hundred thirteen million seven hundred fifty thousands dollars of largely imaginary value. Taxes are being paid upon this sum in the blissful belief that by so doing false dreams will come true. By applying our prevailing 50% basis of tax assessment to this idle frontage and a $4.30 City and County rate, the annual contribution of the owners of such property amounts to one and three-quarter million dollars, exclusive of special assessments

It is conceivable, though exceedingly doubtful, that with the continued growth of this city that the next twenty years may witness the absorption into use of 8% of these zoned lots which are strategically located and about which the environing factors warrant the dignity if potential business classification.

PRESENT WORTH

We have long since learned that the present value of a dollar, receipt of which is deferred into distant years, is worth but a few pennies today. Consider the present worth of this average of $150.00 per front foot if receipt thereof is postponed for such a brief span in the life of any city as twenty years. Credit the right of the owners to receive a minimum of 8% on an investment in such a hazard (a far greater interest rate would be warranted) and admit that taxes, assessments, and management will absorb a minimum of 2½% annually, and the answer is that the present worth of this $150.00 per front foot, with receipt deferred for but twenty years, is but $20.35. If we take a much saner view and accept fifty years before many of these vacant stretches will have a justified sales price of $150.00 per front foot for business use, then the present worth of each foot is exactly one dollar and one cent, and the average 50 ft. lot priced at $7,500.00 is today worth $50.50.

As the basis of value in property is founded on its ability to earn income or render service, we should properly consider a declining price level for most of the vast mileage under discussion as it is incapable of income production and undesirable for service so long as it remains under business zoning. Suffice, however, for the purpose of this article to hold the present average asking price static.

RATE OF ABSORPTION

The rate of absorption of unimproved business property, even such thereof as is favorably located, will depend principally upon the demand created by future influx of population. To attempt to predict this future increase with any degree of close accuracy is quite impossible. Suffice it to say that the tremendous rate of growth from 1920 to 1930 is unlikely of repetition at any near future date. The growth from 1920 to 1924 was approximately 89,000 annually but from 1924 to 1930 this phenomenal rate had decreased to approximately 50,000 annually. Since 1930 it is obvious that our annual gain has been materially lessened by the forces of depression.

The growth of our city is in direct proportion to the prosperity of the nation as a whole. The liquidity and price level of real estate, securities, and commodities in the middle west and east is the barometer by which any material increase in our population can be measured. The percentage of population gain which is of greatest material value to our city consists of those who have accumulated wealth in varying degrees elsewhere, and who bring that wealth here in terms of principal or interest to spend in our marts of trade and in the acquisition of our homes. Southern California with all its marvelous resources and industry is still too young to possess sufficient remunerative avenues of endeavor to provide adequate employment possibilities for the entire segment of our present population which is dependent solely upon physical labor for sustenance.

Mr. Babcock in his report on the regrading of Bunker Hill area in Los Angeles, published in 1931, hazards the prophecy of an increase in our population stream of 50,000 annually during the

three decades commencing with the year 1930. At that time he correctly predicted a lesser rate of increase during the first half of the present decade. Accepting Mr. Babcock's estimate of 50,000 annual increase, and accepting the study of forty cities made in 1927 by Regional Planning Association of Chicago, which established a business use of 50 feet of frontage per 100 persons, we could then anticipate an absorption into use of 500 vacant business lots per annum, which, if our increase was sustained on an approximate level would require 217 years to absorb the vacant business lots in only 60% of the area of our city. This is a very considerable length of time to carry any property before it is put to use. Imaginary benefits so far deferred are actually substantial liabilities!

WHAT TO DO?

Now that we have sketched in the outlines of this picture of economic waste, we face the question of what can be done about it? Certain distinct remedies are available which can be made to apply to a large part of this dormant frontage. The worst obstacle to a solution is the almost impassible barrier of ignorance on the part of the average owner of such land, but the dawn of realization is breaking in some sections under the painful tutorship of continued pressure on the check book. Some very intelligent action has already been taken with profitable results.

CRESCENT HEIGHTS BOULEVARD

Much can be accomplished by the mere change of zone with the necessary cooperation of the zoning authorities and the assessor's office. A typical example is Crescent Heights Boulevard, originally zoned for business from Olympic Boulevard south to Pico Boulevard in 1923. It did not develop in accordance with the zoning and in 1928 the owners realized the mistake and petitioned for the rezoning of the frontage to prohibit business and to permit multiple family use. The result is that with the exception of five lots in the first two blocks south of Olympic Boulevard every lot is developed today and producing an income. Twenty-one new multiple structures have been erected since last November, or are now in course of construction on the west side of this re-zoned boulevard in a distance of two blocks. This should be most significant to thousands of others who lack similar vision and whose business zoned frontage is destined to continued vacancy.

OLYMPIC BOULEVARD

An almost equally interesting example is Olympic Boulevard, westerly from Crescent Heights Boulevard, which is divided into three zone classifications; namely, business, multiple residential, and single family. The long stretches zoned for business are largely idle, weed covered, and without promise. The section zoned for multiple use is witnessing at this time a development of new apartment houses at a rate which recalls pre-depression years. The development of the single family residential portion is slightly further advanced and is outstanding in this western section of Los Angeles. It is of course true that the desirability and price level for single family residential use of certain frontages subject to fast moving automobile traffic is often less than frontage in the interior of the block, but this discounted value is of small moment compared with sustaining the property into eternity in a zone which kills all demand.

The re-subdivision of vacant highway frontage commands attention. We observe the interior of many of our blocks to be well-developed, either residentially or with multiple structures; that the va-

cancy begins at the highway frontage and extends in a strip with an average depth of 150 feet to the improved property. If the business zone classification which applies to this vacant frontage were eliminated and the frontage re-zoned to restrict the land to the use made of the interior of the block, whether single family or multiple residential structures, it would promptly warrant the acquisition of vast numbers of these unimproved frontages for the purpose of re-subdivision into lots facing the side streets, which frontage would, in most instances, warrant a price not less than the value of other interior frontage on such side streets. Many districts have been studied where this warranted price level on the interior streets for multiple use averages $60.00 per front foot, and where the unwarranted asking price of the vacant highway business classified frontage averages $150.00 per front foot. The average depth of these interior lots is 140 feet. It is thus indicated that $60.00 times 150 feet, or $9,000.00, is recoverable in property of this classification for the corner 140 feet of highway frontage which would become depth on the side street and which, in most cases, is without hope for utilization by business. If the owners of such frontage would but realize that the present worth of this $9,000.00 is $4,300.00 more than $150.00 per foot for this 140 feet if they wait only 15 years to secure their price, then intelligence should come to the surface and much of the waste area would be converted into production.

SANTA MONICA BOULEVARD

Another medium of absorption of these vacant stretches is an example admirably established by the City of Beverly Hills in condemning approximately 75 feet of frontage on the westerly side of Santa Monica Boulevard for a distance of approximately one mile from Doheny Drive to Wilshire Boulevard and converting the whole thereof to park purposes. Every neighboring lot has been materially enhanced in value by having this beauty spot accessible. Such procedure is particularly valuable to multiple family districts where improvements absorb the major part of the total lot area and where the congestion of families calls for proximity to open areas for recreation and comfort. Multiple structures located reasonably close to parks enjoy a much higher occupancy factor than those without such conveniences. A district bond issue was the method used to acquire the park strip in Beverly Hills and the Park Department maintains same in a most creditable manner. The justified cost of such acquisition is negligible in comparison with the values resulting. The condemnation of 75 feet of frontage out of the average 150 feet of depth would leave the owner in possession of a valuable 75 foot multiple family lot immediately adjoining the park with assurance of perpetual light, air, and beauty adjoining. Such a lot would command a value level for multiple residential use greater than normal corner influence. The benefits if figured at 25% of inside lots on side streets would reflect $15.00 per foot to a $60.00 per foot inside base level and the fair value for the 75 feet not condemned would be $5,625.00, which, if there were no award for the frontage strip condemned, is a sum $1,325.00 greater for each corner lot with a frontage width equal to the average depth prevailing on the side street, than an asking price of $150.00 per foot, provided receipt of such price is deferred but fifteen years.

WHERE DOES THE BLAME LIE?

I place but negligible blame for the over-zoned business frontage status of Los

Angeles, or any other city, at the doors of the planning commissioners and city officials except for their lack of backbone. I regret to state that much criticism must be directly charged to the greed of the property owners themselves, whether subdividers of large areas or individual lot owners whose demands upon the authorities, and the pressure used to enforce these demands, has been of such magnitude as to force the dedicating of otherwise useable frontages to eternal wastage by improper zone classification, thus making it possible during an active real estate market to exploit such land, pocket the false value created by the establishment of a business zone, and depart leaving a trail of depleted residential value in their wake.

It has heretofore been difficult to combat a strange psychology, not founded upon reason, which casts an apparent charm over any property called business. The average citizen feels an inclination to insert his thumb in the armholes of his vest and revel in the opinion that his particular property when zoned for business is the real diamond, whereas his neighbor's lot zoned for multiple dwellings or single family residential purposes is but imitation.

The tone of this article might reflect the conclusion that I am bearish on the future of business property in Los Angeles and Southern California, or that Los Angeles has perpetrated a zoning crime which other major cities of our Nation have avoided. Such is not the case. I have the utmost faith in the present and the tomorrow of Los Angeles and its environs. I grant to the real business frontage in both the central business district and the decentralized sections the respect which in many instances is so thoroughly warranted. I subscribe to the opinion of its owners that only United States Government bonds can surpass it for the investment of capital. Such property, which is proportionately very limited in extent, is not, however, the subject of this article, nor does this negligible percentage of the business zoned frontage justify the appraiser in reflecting into terms of dollars the absurdities of judgment which have caused the zoning into oblivion of many hundred miles of property which otherwise would command a dollar value or a use value.

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Future Population Growth and Real Estate Values

By WARREN S. THOMPSON

THAT important changes in our population growth are in prospect no longer admits of any doubt. As yet, however, but few people have been sufficiently interested in these changes to inquire into their probable extent and significance. This is probably due to the fact that for a long time our population has been growing so rapidly that, except during the World War, there has been a steady increase in the numbers added to our population from decade to decade. That changes in population growth large enough to result in smaller numerical increases year by year will affect our economic activities in many ways will scarcely be questioned by any one who gives this matter even passing attention. It was undoubtedly the conviction on the part of your convention management that real estate values will be more or less directly affected by the vastness of the changes in population growth now taking place that is responsible for the discussion of this topic tonight.

The first requisite in discussing the effects of population growth on real estate values is to get as accurate a notion as possible of the probable growth of our total population during the next few decades; having done this we can proceed to speculate on the ways in which this probable growth will react upon real estate values and the volume of turnover in real estate transactions.

Any calculation of probable future population must necessarily be based on certain assumptions regarding trends in birth rates, death rates, and immigration. Hence, all such calculations are subject to considerable margins of error. All that can be said of any calculation is that if birth rates do so and so, and if death rates behave in a given manner, and if immigration amounts to a certain number annually, then we shall have a population of a given size in 1940 or 1960. Unfortunately there is not time to discuss the assumptions used here. That alone would take the entire evening and would be unutterably boring to most of you. I can only say that the utmost care has been taken in keeping them within the realm of the probable. Moreover, the calculations derived from them are subject to revision whenever significant new information becomes available. Such forecasts are necessarily unsatisfactory. But unsatisfactory as they are I believe they will come close enough to actual attainment to prove of practical value in many respects.

The growth of population in the United States, then depends upon the three variable factors already mentioned—the birth rate, the death rate, and the amount of immigration or emigration. The future changes in the death rate can be predicted with considerable certitude inasmuch as in the West the death rates do not fluctuate violently except in case of war or epidemics, and the latter are rapidly decreasing in frequency and in deadliness. Hence, the effects of changes in the death rate on population growth can be foretold with a fair degree of assurance. Besides it takes a rather large and long continued fluctuation in the death rate to make any

Dr. Thompson delivered this address before the National Association of Real Estate Boards in Minneapolis on June 27, 1934.—Ed.

significant difference in the rate of population growth. The error likely to be introduced into population estimates by misjudging the trend of the death rate is, therefore, very slight and need give us little concern.

The future course of the birth rate is far more difficult to chart and is of far greater weight in the final estimate. There is only one point of general agreement among those studying population growth intensively and that is that the birth rate will continue to decline. There is much difference of opinion as to how much it will decline. Will it decline one-third in 50 years, will it decline only one-eighth in that period, or will it soon become stationary? The low calculation of population growth made here is based on the assumption that the 1925-29 birth rate will decline by one-third during the next half century, that the death rate will decline but slightly, and that there is no net immigration during this entire period. (Table 1.) The high calculation results from a decline of about one-eighth in the birth rate in this same period, from a lower death rate issuing in an increased expectation of life of about 12 years and from a net immigration of 300,000 annually. The medium calculation as the name indicates, stands midway between the others on all these assumptions and, hence, in population also.

Table 1. Future Total Population as Calculated (in thousands)

Year	High	Medium	Low
1940....	135,100	133,100	131,900
1950....	150,800	142,900	137,100
1960....	167,300	149,800	137,900
1970....	184,200	153,800	134,900
1980....	202,000	155,200	129,200

Since 1930 population growth has actually been somewhat less than the low calculation just given and it is my personal belief that it is likely to remain below it for some time. I see no reason to believe that the birth rate will suddenly cease to decline (already in the last four years it has declined more than the entire decline to 1980 allowed for in the high calculations); nor do I see any reason to believe that there will be any marked relaxation of the present laws and administrative regulations affecting immigration. Hence, it seems highly probable that there will be only 7 to 9 millions more people in the United States in 1940 than there were in 1930; hence, the total population in 1940 will probably not exceed 130 to 132 millions; whereas if it grew by the same number between 1930 and 1940 as between 1920 and 1930 it would number 140 millions in 1940. Between 1940 and 1950 the increase will be even less, unless immigration restrictions are considerably relaxed, and in 1950 our population will probably be in the vicinity of 135 millions. After that it is likely to remain about stationary for a decade or two and then begin to decline.

The advantage of making two or three caculations as has been done here is that if 10 years from now we decide to admit a hundred thousand or two hundred thousand immigrants annually it will not be difficult to tell with fair accuracy what will be the effect on the nation's growth of this change of policy. Thus the addition of 100,000 immigrants annually, between 1940 and 1980, would be to increase the total population at the latter date by about 7,000,000; while adding 100,000 births annually from now until 1980 would increase the population by about 6½ millions. In the discussion which follows I shall assume the low growth, that is, about 130 millions in 1940, about 135 millions in 1950 and 1960 and a decline to about our present population of 126 millions by 1980. I want to make it

clear, however, that although these figures now seem highly probable they would be increased very appreciably, as has just been indicated, by any change in immigration policy which admits more foreigners, and by any increase in the birth rate, or even by a more slowly declining birth rate than that assumed here. These low figures merely represent what now seems the most probable trend in population growth in the light of the facts which are available to date.

Assuming, then, that we shall have a population growing but slowly for perhaps 15 or 20 years and then becoming stationary, or even declining, what is the outlook for real estate values? I can do no more than suggest an answer to this question couched in the most general terms, for whether population growth in any particular community will follow the trend in the country as a whole cannot be told. Each community has its own peculiar problems and its growth depends upon such a variety of factors of local nature that only the most expert investigation on the ground can lead to conclusions regarding it which will be of practical value. Thus it need not be denied that in all probability a resort area such as southern California, or the Florida coast, will follow a different growth curve from the textile areas of New England. A very prosperous population having many persons who can retire at a fairly early age would be quite likely to result in a fairly rapid growth in southern California; but the demand for textiles and the relative advantages of New England and North Carolina as places in which to manufacture them will determine the growth of the textile centers in these regions. Similar factors are operative everywhere, but even so, it does not seem unreasonable to assume that the majority of communities will follow the general growth trend of the country as a whole and, hence, that some discussion of these general trends will be helpful.

Before attempting to answer the question as to what will be the effect of population growth on real estate values it may be well to remind you that real estate (land) belongs in a category by itself; it is not as other goods. It is not elastic, nor is the demand for it as elastic as the demand for most commodities, except, perhaps, at a time when speculation in all lines is rampant. The reasons for these differences between land and most commodities are not far to seek. Very few people can use more than one house, or farm more than a given number of acres, or care to have several offices, but every person needs some space in which to work and live. It is not likely that two-house families, or two-office executives will ever become as common as two-car families, or two-bathroom houses, but every new inhabitant or worker does need some new space. On the other hand, the demand for many manufactured commodities and for many services, is, for all practical purposes, unlimited. Certainly it would be difficult to imagine a society in which there was not need for a great increase in most manufactured commodities or of many new manufactured articles.

The demand for real estate in any community is, therefore, much more closely associated with the size of the population that wants to use the land in that community than is the demand for automobiles, for radios, for electric refrigerators, for vacations, for telephones, etc., etc. In the United States *e. g.*, the demand for automobiles much exceeds the demand in all the rest of the world although we have only about one-fifteenth of the world's population.

The demand for farm lands is, of course, determined largely by the need of the community for food and clothing and the need

for these is relatively inelastic. Once one has attained a fairly comfortable position in life his consumption of food does not increase very greatly. In fact the more comfortable classes need less food than those who engage in rigorous hand labor. Any marked increase in the incomes of the poorer classes would unquestionably lead to an increased demand for the more expensive foods—fruits, meat, vegetables and dairy products—which require more land for their production, but as compared with most manufactured products the demand for agricultural products is relatively inelastic. Hence, there can be no reasonable doubt that as population ceases to grow the value of farm lands will tend to become stabilized unless vast foreign markets are opened. At the present time the disordered condition of the world justifies no hope of a recovery of our markets for surplus agricultural products, to say nothing of the opening of new markets. I venture the prediction, therefore, that the era of speculation in farm lands with which those of us who were raised in the Middle West and Far West are so familiar is drawing to a close, assuming, of course, no marked change in the value of the dollar. The prospect of great inflation would, however, lead to feverish speculation in goods of all kinds and in land in particular. But in the normal course of events there is little likelihood that the demand for agricultural products will call into use more and more lands on the margin of profitable cultivation and thus make possible the rapid, or even the steady, boosting of the values of the better than marginal lands. This is not to say that there will not be changes in the values of farm lands in particular areas suited to the growing of particular crops the demand for which may change. However, such shifts cannot possibly be foreseen long in advance, nor can their extent be judged very accurately even by people who are thoroughly familiar with the localities affected; hence, they cannot be taken into account here.

Since there is much more interest in the probable value trends of urban real estate than in that of farm lands it behooves us to hasten on. The basic reason for the great rise in real estate values in cities during the last few decades has been the very rapid increase of their populations. From the beginning of our history our cities have grown much faster than the nation as a whole. They have absorbed a steadily and rapidly increasing proportion of the total population. Thus, whereas, places of 8,000 and over contained only 3.3 per cent of our population in 1790 they contained 49.1 per cent in 1930—almost a fourteenfold increase in proportion—while places having over 2,500 increased from 7.0 per cent of the total in 1820 to 56.2 per cent in 1930. The larger cities have had an even more phenomenal growth. Metropolitan districts of over 100,000 contained only 1.3 per cent of our population in 1820 but in 1930 they had 44.6 per cent —over a thirtyfold growth in a little over a century, most of which has taken place since 1890 when only 15.4 per cent of our people lived in cities of this size. It is little wonder, then, that most of us have come to feel that steadily increasing real estate values in the cities are the normal condition and that the recent set-back is of a temporary nature. For such a belief we not only have testimony from our own experience, but we know that much the same sort of change in values has taken place all over the Western world. Indeed a similar rise in values has taken place in all lands where the development of urban industry and trade has been rapid. If we were to judge of the future from past experience, therefore, a steady and even a rapid increase in urban real estate values

is indicated, as the physicians say. But with the close relation between population growth and urban real estate values that has prevailed in the past it seems altogether unlikely that the latter will continue to increase at anything like the past rate when the former grows but slowly, ceases to grow, or even declines. It should be noted, however, that urban communities may keep on growing faster than the total population, for, as I have indicated above, there is no likelihood of any considerable increase in the demand for farm products in the foreseeable future. But even though cities may grow faster than other parts of the nation they will undoubtedly grow but slowly as compared with their former rates. For the near future, therefore, and again leaving monetary inflation out of account, it would seem that city real estate values will depend upon how much future growth has already been discounted in current values. It can scarcely be doubted that if current values in X are based on the belief that X will grow 25 per cent during the next decade as it did during the past two or three decades while X actually grows but 5 or 10 per cent then real estate values in X will almost certainly suffer rather severely when it becomes clear to the public that X's days of rapid growth are past

In the very nature of the case one cannot prove that most of our cities will grow more slowly in the future than in the past but all the facts upon which the populationist can base reasonable calculations point to that conclusion The question the populationist must ask is: Where are the people to come from to keep the cities increasing at anything like the rates prevailing in the past? They are not being born now as has been shown above—each year shows fewer births—and the sentiment of the country is strongly against allowing any immigration as long as there is any significant amount of unemployment among our present population. Therefore, the only place from which the cities can recruit any appreciable number of new inhabitants for some time to come is from among our own rural population. There is still a considerable reservoir of unneeded labor on the farms and in the smaller towns, but even so there are not enough persons to be spared from the farms and villages to keep even the city districts of over 100,000 growing as they have been. Such districts increased in population by over 12 millions between 1920 and 1930. If they were to increase by the same absolute number between 1930 and 1940 they would have to absorb not only the entire probable increase of the nation (7 to 9 millions during this decade) but would have to draw 3 to 5 millions from the smaller cities and the rural population. Such a growth of the larger cities at the expense of the rest of the country is highly improbable but even if the cities of over 100,000 grew by 12 millions from 1930 to 1940 they would increase by only 22 per cent as compared with 28 per cent between 1920 and 1930; that is, they would grow but three-fourths as fast. One cannot say categorically that the cities of over 100,000 will not increase by 12 millions during the next decade but, for one, I certainly do not believe that they will.

In this connection it may be of some interest to note the forecasts of the New York Region as issued by the Regional Plan Authority and compare them with certain other calculations which seem to the writer worthy of careful consideration. The Regional Plan Authority has estimated that the New York Region which had about 11.5 millions in 1930 will have about 21 millions in 1965, a gain of about 9.5 millions in 35 years. This is equal to about three-fourths of the entire gain of the nation during this period, as calculated

above. If, on the other hand, the New York region only has the same proportion of the nation's total population in 1965 that it had in 1930 it will have only about 12.8 millions at that time and if it absorbs the same proportion of the nation's total increase in the future as during the last decade it will still have only about 13.5 millions. I am not putting these figures forward as definite estimates for the New York Region, I only want to call attention to the fact that it will take vast changes in the distribution of the nation's population to permit even New York to keep growing numerically as it has been. It is not impossible for it to do so, but I very much doubt if any of us here really believes that this region will keep on growing in this way when our population, as a whole, has ceased to grow or has even begun to decline. It is not reasonable to suppose that this can happen to more than a few among the cities of over 100,000 and these not the largest in this group.

Since the above was written the preliminary results of the special census of Chicago taken in January of this year have been announced. They indicate that the population of Chicago was 117,000 smaller on the latter date than at the time of the 1930 census, that is it numbered about 3,260,000 in January, 1934. This may be compared with the 3,640,000 which Chicago would have had if it had continued to grow since 1930 as it did from 1920 to 1930 and with the 3,440,000 it would have if there had been no migration into it or out of it since 1930. One is disposed to regard this loss of population, about 190,000, as purely a depression phenomenon; but it is by no means certain that the return of prosperity will mean a return to the rapid city growth we have had in the past even for the short period needed to gain back losses. As for continued rapid growth in the cities I have already shown that it is highly improbable.

In considering future growth of the cities we not only must ask where the population can come from to enable them to grow at past rates, we must also ask whether there is any likelihood of the decentralization of population affecting the growth of these cities in the near future. This is too large a subject to undertake here. It can only be noted that suburban growth has already outstripped central city growth in many metropolitan areas and that in some parts of the country there has been a considerable movement of population to acreage tracts near the cities. Furthermore, it seems only reasonable to suppose that the effects of the automobile, cheap telephone communication, and the widespread distribution of electricity have only begun to manifest themselves in the re-distribution of population, because, up to the present they have been largely ignored in the spatial organization of business enterprises. In the future the large city will have to compete not only with its immediate suburbs for population, but also with more distant areas as they become more readily accessible, more easy to communicate with and enjoy the benefits of cheap electricity. It seems only reasonable to assume, therefore, that city real estate values will increasingly feel the effects of this competition. Furthermore, the surrounding areas now accessible are so large (the area of a circle increases as the square of its radius) that a scarcity of sites for industrial and residence purposes will be less common than before the days of the automobile, the telephone, and the general distribution of electricity. These outlying areas do not compete in the same way with the "downtown" areas used for offices and for large-scale retailing but even here there are indications of a certain amount of decentralization which may

sooner or later affect downtown real estate values.

In view, therefore, of the slowing up of population growth, of the changes in the distribution of people within urban areas and of the increasing availability of smaller communities both for business and for residence it seems not unreasonable to look forward to a period of more stabilized real estate values in the cities as well as in the nation as a whole. There will, of course, be some communities where values will decline and there will be some where they will increase rather rapidly, but, by and large, it would seem that we have reached the end of the period when we can reasonably expect the continuance of the increase in values which we have come to regard as normal. This means, as I see it, that the speculative element in real estate transactions will gradually be eliminated. Real estate will be bought less and less for a rise in price and more and more for long time investment and for immediate use. In a word, I believe that the outlook for population growth is such that it will be a bearish factor in the real estate market. I cannot see the demand for land for any or all of its varied uses rising rapidly enough to raise its price as in the past, except in particular circumstances which cannot possibly be taken into account in making a general survey of the situation. A local boom, due, let us say, to the rapid development of a new industry, or monetary inflation, or a European war issuing in a greatly increased demand for agricultural products, or any one of a hundred other occurrences might well send real estate values skyward in many localities, or even in the country as a whole; but, barring such unpredictable events, there is good reason to believe that there will be much less speculation in real estate in the future than there has been in the past.

Stabilized real estate values will probably have another effect of interest to Realtors. It seems highly probable that the turnover of real estate will be much slower as the chance of speculative profit is decreased; for one of the important motives in buying land in the past has undoubtedly been the opportunity to make a profit on a fairly quick turnover. Hence, the volume of real estate transactions is likely to diminish considerably as values become stable. Real estate bought for investment and for use will certainly be held longer, on the average, than that bought for profit on turnover.

But even though the tempo of real estate transfers should become slower as population ceases to grow the chief function of real estate brokers will remain. There will always be need of brokers to bring sellers and buyers together although there may not be need for as many if the volume of transactions decreases. Besides, if industry should once start to decentralize in earnest, and particularly if the great centralized offices of large industries and insurance companies should be broken up into smaller units, and if neighborhood merchandising should grow, there will be an enormous shift in population from the more crowded areas of the larger cities to their peripheries, and even to new communities. There can be little doubt that many adventitious circumstances have contributed to the present distribution of population. Many cities have grown largely through a series of accidents rather than through any inherent advantage they possessed as compared with their competitors. Industries have been started and developed with but little regard to the economic factors involved and with even less concern over the social problems created by their location in a particular community. In the future, more attention will be paid to the economics of factory and office location

and the advent of truck transportation will nullify some of the railway freight differentials which have exercised such an important influence in the growth of particular communities. Besides, it seems highly probable that considerations of social welfare will play a much larger part in the distribution of people in the future than in the past.

As a consequence of the operation of these factors making for a more economically sound, and a more socially desirable distribution of population it is not improbable that there will be considerable shifting of people from larger to smaller communities in the near future. Such shiftings are certain to have a marked effect on the real estate values in many communities and they will also affect the rate of turnover. It is also highly probable that in the redistribution of population which will take place far more attention will be given to community planning than has been given to it in the past. We shall have fewer and fewer communities which like Topsy have "just growed" and more and more which are laid out with the welfare of the community and the economy of production as the criteria of excellence. The supplying of the real estate needs of businesses and of families in this new scheme of community building will certainly require the services of the expert Realtor. He is the only person with any experience at all in making such adjustments, hence, it is not unlikely that, with a minimum amount of readjustment the Realtor will become the recognized agent of the community for effecting these large shifts of population from community to community with the least possible loss to all concerned. With the passing of speculation the real estate broker will become more and more of a professional who will furnish expert advice to his clients in their search for the real property which will be of greatest value to them in their businesses, or most satisfactory to them as places of residence. Thus the changes in population growth which lie just ahead are quite likely to be of considerable importance in bringing to earlier fruition some of the tendencies in the real estate business which have been noticeable for some time.

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Depreciation

By JAMES J. GROGAN, M. A. I.

THE purpose of this paper, as I understand, is to start a discussion, and it is presented with this thought in mind, and not with the idea of proving anything or of displaying any particular expert knowledge on the part of the writer.

Depreciation, as herein discussed, applies only to buildings and no consideration is given to land.

What is depreciation? To my mind, the proper definition is "shrinkage in value." This shrinkage, speaking exclusively of buildings, occurs from two sources: (a) Physical deterioration, or (b) Obsolescence.

Physical deterioration, often, and I believe erroneously, referred to as depreciation in contrast to obsolescence, is the exhaustion of the physical parts of the building due to wear and tear, exposure to the elements, time, etc.

Obsolescence, generally speaking, is shrinkage in value owing to lessening of desirability due to inadequacy to needs or utility. Obsolescence is often less tangible than deterioration, but of much more far-reaching effect.

Depreciation is used in determining value, by deducting from replacement cost, the shrinkage in value, at a specific time. If the sale price, or utility value, is sought in an appraisement, obsolescence must necessarily be given consideration, even more than physical deterioration. If only physical value is to be determined, as for insurance, no consideration of obsolescence is necessary, or possibly even desirable.

Logically, to arrive at a fair valuation, it would seem that the proper procedure would be to deduct a certain percentage of the reproduction cost for deterioration and another definite percentage for obsolescence. However, I think this would be most impractical and dangerous for several reasons. In the first place, no one knows today how long some of our buildings will remain, as, for example, our concrete fireproof structures. Certainly their physical existence would apparently be almost indefinite, and there would therefor be practically no deterioration. On the other hand, however, who can say how long it will be before many of our present modern buildings will be totally obsolete? Who would have thought in 1910 that before 1920 brewery and distillery buildings would be useless? Is it altogether inconceivable that aeroplanes will render our almost indestructible garage buildings useless in a comparatively short time? The only manner in which we can forecast the future is to study the past. From our experience we know that certain types of certain buildings have an economic life of a certain number of years, and the best we can forecast for the future is a similar life, modified possibly by knowledge and experience of the present. I, therefore, believe it is most reasonable to use, in computing depreciation, one percentage figure for both deterioration and obsolescense.

An exhaustive study of depreciation was made by men far more competent than I, and I believe it would be advisable to read their report, which is as follows:

REPORT OF COMMITTEE ON DEPRECIATION AND OBSOLESCENCE

October 24, 1928

At the meeting of the Board of Directors of the National Association of Real Estate Boards on April 29, 1927, President C. C. Hieatt was authorized to appoint a committee for the purpose of determining the useful or economic life of various types of real estate improvements. This action was taken as a result of a request from the United

States Bureau of Internal Revenue, to the National Association to advise the Bureau with reference to the economic life of real estate improvements as a basis for determining the depreciation and obsolescence allowance in income tax returns.

The Committee appointed for this purpose by President C. C. Hieatt consisted of the following:

Mr. Walter S. Schmidt, Cincinnati, Chairman.
Mr. George C. Smith, St. Louis.
Mr. Irving S. Whiting, New York City.
Mr. William H. Ball, Philadelphia.
Mr. James W. Belanger, Chicago.
Mr. Arthur J. Mertzke, Chicago, Secretary.

Through the Department of Education and Research of the National Association, every member Board in the National Association was requested to appoint a committee consisting of those members of each local board most familiar with the useful or economic life of real estate improvements in their respective communities. Such committees were appointed in more than three hundred local boards of the Association and out of this number one hundred and eleven sent in reports drawn up according to the directions furnished to each local committee by the national committee in charge of the investigation.

The one hundred and eleven reports were then tabulated according to

1. Sizes of cities.
2. Sectional location of cities.
3. Rate of growth of cities.

Averages were prepared for each classification. The useful life reported for each type of construction under each type of building was then tallied for the United States as a whole to show the distribution of useful life estimates among the various periods. By this means the term of life in each classification which received the largest number of votes could be readily determined by glancing at the table.

With the complete questionnaires and these tabulated summaries before it the national committee met in Cincinnati on October 24, 1928, for the purpose of preparing this report. The useful or economic life in years of various types of construction in the various kinds of buildings based on these tabulations which were agreed upon by the committee are as shown below:

1. The Committee was not governed in its conclusions alone by the averages which the questionnaires established, but rather in considering the various types of structures, gave added weight to reports from those sections where experience through use of the types in question over extended periods established particularly valuable bases for conclusions.

2. The figures adopted by the Committee as showing the useful life of buildings, were based on a consideration of the building as a unit. The Committee was of opinion that an attempt to separate any type of building into its component parts under general headings,—such as, structure, movable equipment, immovable equipment, power plants, etc.,—would lead to a distorted picture.

3. The grouping of buildings designed for various uses into classes based solely upon the character of the construction, the Committee felt would not give proper data for determining the economic life. The use for which the building is constructed is at least an equal element with the materials used. Approach to the problem from this standpoint naturally results in varying lengths of life for different proposed buildings coming within the same structural classification.

TYPE OF BUILDING	TYPE OF CONSTRUCTION				
	Steel Frame Fireproof	Reinforced Concrete	Masonry Slow Burning With or Without Steel Frame	Masonry With Frame Interior	Frame
Office Buildings	40	40	35	30	25
Stores	50	50	40	35	28
Warehouses	55	55	48	42	35
Loft Buildings	45	45	35	30	25
Factories	40	40	35	30	25
Public Garages	50	50	35	30	20
Theatres	33⅓	33⅓	25	22	20
Hotels and Elevator Apartments	35	35	28	25	22
Apartments and Flats without Elevators	40	40	35	30	25
Stores with 1 or 2 Stories of Rooms or Apartments	40	40	35	30	25
2, 3, 4 Family Dwellings	42	42	38	33⅓	30
Row Houses	45	45	40	35	30
One Family Dwellings	50	50	50	50	33⅓

4. After weighing the various arguments advanced in favor on the one hand of fireproof steel, and on the other of reinforced concrete buildings, the Committee decided that buildings of these two classes had an equal economic life. The structures of both are seemingly almost indestructible so far as physical deterioration is concerned, but there seems no doubt that changes in arrangement, architectural design, in facilities to be afforded, as well as in the habits and tastes of the public, will operate in the future as well as in the past to limit the useful life of buildings, even of these apparently indestructible materials. Mass movements of population, shifting of centers for different classes of use, changes in the arts, etc., create an almost certain obsolescence.

The Committee feels it has given due weight to these various elements in arriving at the useful economic life. There are, of course, exceptions to the figures on the one side downward, due to extraordinary happenings of the kind mentioned above, and on the other side upward in the useful life, due to extreme conservatism or economy in living, which may prevail in different sections of the Country.

5. Exceptions to the estimates of useful life given above will, however, be chiefly occasioned by the following causes:

A. Special use, most applicable to manufacturing properties where the building is suited to a limited use, perhaps, even a single use.

B. Destruction from within due to the character of the materials or chemicals used in the occupation of the building.

C. External depreciating elements, such as unstable soil, damaging climatic conditions, salt or fumes, acid, etc., in the atmosphere.

These would be special cases to be treated either sectionally, or on their individual merits.

6. It is the Committee's recommendation that inasmuch as sectional and local variations and differing rates of growth of cities exist in the useful life of buildings, that the useful lives, as given, be subject to a twenty-per cent variation upwards or downwards, depending on the conditions mentioned above.

7. The judgment of the Committee is presaged upon buildings being constructed under proper method and of approved materials.

8. Taking up the different tyes of buildings, the Committee makes these brief comments, as to certain classes which vary from what might be called an average life.

A. **Warehouses.**

It was felt that buildings of this character could best be adapted to fluctuating use, and that the economic life was, therefore, longer than other buildings of the same type of construction. We have made a special classification for pier and special commodity buildings of covered frame skeleton construction. The life of such buildings is usually very short, and they should be put in their own special classification.

B. **Theatres.**

Theatres, from experience, average to have the shortest life of any type of building. Although it is true that Theatres continue in use occasionally after a lapse of a considerable period of years, yet such continued use is made possible only by the expenditure of great sums in alteration and rehabilitation. Theatres should also be given a lower life than other types of structures, because they are adapted to but this single use, and because the type of recreation sought by the people varies continuously; also, the advancement in entertainment devices, such as radio and television, create uncertainty as to the future of the Theatre as now designed.

C. **Hotel and Elevator Apartments.**

(a) **Hotels.** The profitable life of the Hotel, experience proves, is comparatively short. Despite physical soundness of the building, it appears that there is almost a dead line from thirty to thirty-five years in the continued profitable use of the Hotel, due to the fact that Hotel Good Will is of an ephemeral nature, and patronage is easily weaned away by the coming into existence of larger and more modern hostelries.

(b) **Elevator Apartments.** Elevator Apartments are given the same useful lives as Hotels. While their use may be continued beyond the years mentioned, it is the judgment of the Committee that the use ceases to be profitable considerably before the period assigned in the schedules attached. Nowhere does the demand for improved living conditions and the use of the advantages that come from our inventive age catering to the convenience of living and the rising standard of living, have a greater effect on useful life than upon this type of structure.

D. **One Family Dwellings.**

No distinction is made between the various good methods in use for residential construction, except frame. It was felt that despite the higher class building resulting if steel frame or reinforced concrete is used, yet that these superior meth-

ods of construction would only be used in residential buildings of greater cost; and that while such buildings would have a longer physical life than those constructed of masonry with frame, yet they would be subject on the other hand to greater depreciation in value because of higher cost and limited resale possibilities.

As is apparent from the foregoing report, one of the objects thereof was the attempt to standardize figures used for income tax purposes. The Treasury Department accepted the figures of this committee, and used them in its exhaustive report "Depreciation Studies, Preliminary Report, of the Bureau of Internal Revenue" issued in January, 1931, the last report, I understand, from the Treasury Department on the subject.

It must be kept in mind that the figures used in the report are general, and applicable to classes and the entire country as a whole, and that, therefore, they must be used with discretion if used in appraisal work. Buildings within a class differ radically and, therefore, the depreciation is often far from uniform. Homes of the colonial type, for instance, seem to have retained their charm far longer than many other types, and, therefore, suffer less obsolescence.

One peculiarity of obsolescence is that it may occur from opposite causes. Both the increase or decrease in land value often destroy the value of the building. If a residential street becomes desirable for business purposes, the value of the buildings decreases; if the value of land under a large structure, such as an office building, decreases, the building itself suffers, and the depreciation in value is much greater than ordinary.

Other than changes in land values, some of the greatest factors in depreciation—or more specifically, obsolescence—are:

1. Changes in style of architecture;
2. Changes in neighborhood—colored invasion, intrusion of business, etc.;
3. Change in zoning;
4. Change in methods of transacting business, particularly in manufacturing;
5. Changes in manner of living—efficiency apartments;
6. Poorly planned structures, either residential or business or industrial;
7. Lack of modern facilities.

Depreciation is usually computed in one of three ways, i.e.: (1) Flat Rate; (2) Component Rate, or (3) Composite Rate.

To my mind, there is not a great deal of difference, and any one of the three is satisfactory, although I am inclined to favor the Flat Rate.

A matter often disputed at length, is whether or not interest should be computed on the reserve set up for depreciation. If the property is leased to a substantial tenant for the ordinary life of the building, and particularly on a net lease, and if it is reasonably certain the income will be forthcoming during the full term of the lease, I believe interest on the reserve should be allowable, as the owner has returned to him funds he is at liberty to reinvest; but otherwise, I am strongly of the opinion that no interest should be computed on the amounts set up as a reserve for depreciation, for the simple reason that this necessarily assumes the income will remain constant, whereas we all know that, as a matter of fact, income from buildings (excluding land) normally decreases.

The great difficulty in figuring depreciation, and particularly obsolescence, is that we must almost necessarily be guided by the past and what we can foretell of the future, and this is made more difficult owing to the fact that ours is a comparatively new country, and one of rapid changes, unlike Europe and the older countries; there the changes are more slow and uniform, particularly in buildings, and hence the obsolescence more readily determined.

♣ ♣ ♣

Rural Appraising

By D. Howard Doane

WE find it difficult to go back to the beginning of rural appraising in this country. It is probable that it started with rural loaning. If this is correct, it begins with the colonization of America. But the making of rural loans was old when America was young. I have a recorded mortgage given by one needing money and offering dates as security. The date of this instrument is about 700 B. C. It is difficult to see how this lender could have determined how much to loan his neighbor without appraising the security —the dates. "Well," perhaps the scoffer will say, "surely he made no real appraisal, he just looked at the dates on the top of the basket and guessed what they were worth, then cut the amount in half and loaned the difference." I am inclined to agree with this guess because even down to the days of recent history and the time of my personal familiarity with the subject, about twenty years ago, that was still the accepted and generally followed practice. It has seemed to me that our appraisals fit admirably into a system created by the Persians or Egyptians, and certainly we must be given credit for the fidelity with which we have stuck to our early instructions.

The serious part of these remarks is that they are altogether too true. The probability of ever accomplishing a change seemed remote up to the period of the war. Those of us who ventured suggestions for a study of the subject and gave some illustrations of the possible results were laughed out of court. It has taken some rather severe experience to make us ready for a serious study and an attempt at codification of rural appraising.

It was in 1916 that I began my work in rural appraising. I searched in vain for literature on the subject. Finding none, we started some research that led to the creation of a complete system of making appraisals and farm loans. The group that located and organized the Federal Farm Loan Banks in 1916-17 indicated that this sudy was the only material they found in the United States that assumed to present facts on land valuation.

During the fall of 1932 I had a part as President of the American Society of Farm Managers in laying the foundation for what is now the National Joint Committee on Rural Credits. It came into being through the cooperation of our organization with the American Farm Economic Association. These two groups invited others. The plan was to bring together representatives of rural debtors and rural creditors through a middle group whose motives would not be questioned. These efforts have resulted in the formation of the National Committee referred to which is made up of representatives of:

Life Insurance Farm Conference
Federal Land Banks
Joint Stock Land Banks
American Society of Farm Managers
American Farm Economic Association
American Agricultural Editors Association
American Farm Bureau Federation
National Grange.

This committee has appointed subject matter sub-committees. One such is the sub-committee on Rural Appraising. It is composed of representatives of all of the original groups in the Central Committee. It has met twice and completed its first report, a copy of which appeared in *The Journal of the American Institute of Real Estate Appraisers.*[1] I will endeavor to

1. See Vol. II, No. 3, page 260.

show how it creates the background for what the committee hopes will some day become the standard of practice for American Rural Appraising.

I might add that most European countries have quite well-defined rural appraisal systems. The one in Denmark, for example, has resulted in a public appraisal on every parcel of land in the country. The system has stood the test of more than 100 years. The author of a text on Danish appraising says that all land should be appraised at least once every seventy-five years. The report of our committee is quite similar in principle to the British land appraisal system.

This first and preliminary report makes no attempt at finality,—it is but the first step in a desired direction. Further, what I am saying is but the expression of an individual applying some of the suggestions of the Appraisal Committee.

AN OUTLINE OF RURAL APPRAISING

Let us divide all rural appraising into three divisions:

Materials, or the technical division. This division has to do with the study of the factors which go to make up value, such as soils, drainage, topography, taxes, crops and cropping plans, and improvements.

Methods, or technic. Here we discuss the ways and means of putting the materials together. We deal with the processes necessary to build the materials into a completed whole—the final appraisal. In this division we deal with definitions and *appraisal procedure.*

Ethics. Regardless of the recognized excellence of the material, or the skill of the constructor, there is little of value in an appraisal that is the product of an unethical or dishonest appraiser.

An appraisal, then, to command respect must be made by a man who knows the elements that go to make up rural values; who knows how they are assembled, weighed, and coordinated; and who adds to all an honest personality, for the end product is but the reflection of his opinion.

THE ASSIGNMENT

In handing an appraiser an assignment he should be given the following information: Correct legal description of the land including acreage; distance and direction from nearest town; occupant of farm or local person to see in regard to unobservable facts; *kind of appraisal desired.*

It does not seem advisable in the case of an appraisal for a loan to state the amount desired, or the per cent of the appraisal that will be loaned. No other information which would tend to fix or indicate values in any manner or amount should be disclosed.

The appraiser's job while going to and on the farm may be divided thus:

1. Enroute, determine all community facts which affect the property such as: nuisances, advantages, minerals, nationality of people, trends, schools, churches, roads, etc.
2. On the farm, examine the physical and use aspects of the land as: soil, topography, erosion, drainage, cropping system, maintenance of fertility, etc.
3. Observe and measure all improvements, getting such data as is necessary to determine effective use, obsolescence, age, and depreciation. This, of course, is the background for finally fixing building values.
4. Get all facts from books of record, elevators, and other sources, showing crop yields, prices, tenant share, and farm owner's operating costs such as taxes and insurance, so that the income of the farm can be determined.
5. All other facts not previously obtained which might add to or detract from the land value, which are not directly reflected in income such as home use and attractive special features such as rivers, lakes, and springs.

APPRAISAL FORM

The form used by an appraiser should have all necessary questions for recording the basic data needed to make a complete earning statement and all the necessary

adjustments which add to or subtract from the normal earning. An excellent test to determine the advisability or necessity for including a question in any appraisal form is whether it contributes to the ends suggested.

No attempt will be made to suggest all the questions that should go into an appraisal form. A few that have a bearing on the committee's recommendations and some others will be shown.

SOILS

Of course, no man can assume to be an accurate rural appraiser unless he has a workable understanding of soils. This does not necessarily mean that he must be a soil expert but it does mean that he should know and be able to identify the types recognized by the State Agricultural College in the territory in which he works. Many of the states are now ranking their soils in accordance with their productive value. Some few make three ranks as Michigan; others a few more, as Illinois—having ten; and still others give a separate rank for each type recognized on their state surveys, as Missouri—about thirty; and others run up into the hundreds. This ranking is very helpful to appraisers. It enables them to weigh and compare one soil type with another. Illustrating for a 160 acre farm where three types are found and ten ranks used as in Illinois,

Soil type, No. 42	Acres, 80	Rank 1 =	80
Soil type, No. 67	Acres, 30	Rank 4 =	120
Soil type, No. 19	Acres, 50	Rank 5 =	250
	160	÷	450
Average rank			2.8

In addition space should be provided for describing according to type the soils as they are observed on the farm. Some may desire to show the results of tests to determine need of lime, nitrogen, and phosphorus.

TOPOGRAPHY

Soil types are closely associated with topography. Often it is possible to determine a type or eliminate other possible types by this one feature. Its importance in relation to erosion needs no discussion. When appraising for long time loans major emphasis is laid upon topography, both from the standpoint of erosion and drainage.

TAXES

In spite of the fact that taxing authority does not permit confiscation, taxes often do that very thing. An increase of $1.00 per acre tax is equivalent to reducing the value of land $20.00 per acre. An appraiser must determine the past, present, and probable future taxes of a farm for use in his earning statement.

WATER-MANAGEMENT-USE-YIELDS AND RENT TERMS

These and other similar and essential facts are to be obtained by an appraiser when he is on the farm or when obtaining data at other points. It is not necessary to describe just how the facts are developed or what questions are asked of land owners. The general statement that all facts affecting value must be obtained covers the situation.

EARNING STATEMENT

Let us assume that we are to appraise a 160 acre farm in the corn belt of Illinois. It is 3 miles to a good town and market on a concrete highway. In the community there is a consolidated school and good churches. The farm is well-improved and well-maintained. Weed pests are developing in the form of thistle and bind weed and it is a high risk hail region. A normal crop rotation is corn, corn, oats, clover. Alfalfa is grown and some permanent pasture maintained.

TABLE I

Income

Crop	Acres	Yield	Price	Amt.	Owner's Share	Owner's Part
Corn	60	40 bu.	$ .45	$1,080	½	$ 540
Oats	30	40 bu.	.30	360	⅖	144
Clover	30	1½ T.	8.00	360	½	180
Alfalfa	10	3 T.	10.00	300	⅓	100
Pasture and Buildings.	30	..	6.00	180	All	180
						$1,144

Expenses

Taxes @ $1.25 per acre	$200	
Insurance	25	
Maintenance @ $1.00 per acre	160	
Clover seed, 4 bu. @ $6.00 per bu.	24	
Management @ 50c per acre	80	489
Net farm income to owner		$655
Capitalized @ 5% or earning value		$13,100

Adjustments Per Acre

Location	Add	Subtract
Schools and Churches	$ 5	
Roads	2	
Markets	2	
Home Features		
Neighbors	1	
Health	1	
Other		
Pests and hazards		$5
Nuisances		
Salability	4	
	$15	$5
Net to add	$10 x 160	$1,600
Final basic value		$15,355
Add or subtract for kind of value, as normal sale value, condemnation value, loan value, etc.		$
Final value as called for by client		$

The appraiser determines the facts shown in Table I not on the basis of what the farm is growing at the time of the appraisal but on the basis of typical and long time use of similar land in the community. For example, suppose a farmer has three-fourths of his land in corn and one-fourth in potatoes. He is in a region where most of the farmers follow a rotation of one-half corn, one-fourth oats, one-fourth clover and about 10 to 15 per cent in permanent pasture.

It is apparent that the corn-potato income will be higher than the four-year rotation. The appraiser uses crops and yields which are typical of the community and reasonable to anticipate under typical management. The price is set by a predetermined three to ten year average of the crops produced as of the farmer's selling point.

The part which tenants normally give for share rent is used as the basis for division. In this case, one-half the corn is delivered shelled, two-fifths oats are given, and the tenant pays all threshing (or one-half oats and each pays one-half threshing). One-half clover in the stack and one-third alfalfa in the bale. Other divisions are recognized which are influenced by division of threshing, baling, shelling, and seed costs.

The total of $1,144.00 is the gross income of the owner, that is, it represents his total income against which there are no more direct expenses for threshing, delivery, or other selling costs.

EXPENSES

These are the normal expenses the owner, or, perhaps we should say "ownership," bears. These figures are set up the same for farms actually rented as those operated by resident owners. The portion not accounted for here goes to the operator to cover his costs and are the income against operation.

Subtracting expenses from gross income leaves net return which when capitalized at a rate determined in advance or the one customarily used or received in the community gives the capital value of the farm on an earning basis alone.

ADJUSTMENTS

There are factors other than those which directly affect earnings which nevertheless affect value. The committee groups them

under "location and home features." Others than those shown may be such items as a packing plant, railroad shops or lines, a general community of poor land around a good farm. Favorable features may be good church and school conditions, good roads and markets, desirable living and health conditions. Current sales for similar land is also considered.

The result obtained after adding to or taking from the earning value, or the net adjustments, gives then the *"basic value"* of the farm.

The committee felt that they could meet one of the chief difficulties encountered when groups of different kinds of appraisers get together, in saying that *all* appraisers might follow the same procedure up to this point. Previously the loan appraiser and the one appraising for condemnation purposes, for example, found much that did not harmonize in their thinking and practices. To bring all to one common meeting place, it was decided to call the value reached by the process shown "basic value" and then suggest that from this point each kind of appraisal might be adjusted still further to make it the *kind* desired. To illustrate: the courts base condemnation values on a presumed "highest and best use." Manifestly then one setting a condemnation value would *add to* the basic value an amount he deemed correct to represent all the facts and conditions. One desiring an assessment value for taxes would probably *subtract from* the basic value, etc.

BUILDINGS

Buildings are appraised on the basis of present replacement less observed depreciation and obsolescence, when the latter applies. They are set into the appraisal apart from the calculations previously shown and each building is described as to dimensions, foundation, roof, interior, and conditions.

The question of whether the final building value should be added to or subtracted from the basic value is not generally agreed upon. One group says that income for buildings is shown in income from pasture and building rent, and cost against them is shown in taxes, insurance, and maintenance, and hence they are fully accounted for in the final basic value.

Others say they are not adequately accounted for and they *add to* basic value the appraised value of buildings up to the value of an adequate set. Some loan men say that to obtain the loan value on the land alone, the value of the buildings must be subtracted from basic value.

It is probable that much of the confusion arises over the small income good farm improvements actually return. It is a common experience to find unimproved farms renting for as much as those that are improved. It is probably true, however, that unimproved farms have the *"use"* of buildings on other farms in the form of storage, barns for horses working the land, and homes for the operators.

It is not assumed that the illustration used here is final or even conclusive. It simply shows one way in which the Appraisal Committee's report may be used as a background for actually setting down in detail the successive steps used in finally arriving at an appraised value. In the past it is probable that our best and most experienced appraisers have used some such method rather unconsciously. They have reached a correct answer at the end but *did not* show the steps taken in arriving at it.

Now executives are saying, "Give us the facts. Give us your broken down and detailed analysis of the facts which influence value, and we can then judge the merits of the final value."

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The Safe-Risk Rate Formula

By ROY J. BURROUGHS

MR. IVAN A. THORSON, M. A. I., wrote an article for the January 1933 issue of this *Journal* entitled "Relation of Value to the Purpose of the Appraisal," wherein he set forth the thesis that:

> "Instead, therefore, of attempting in an appraisal of real property to estimate and to designate in dollars the future income spread, we may obtain approximately the same results by estimating from all available data the probable hazards incident to ownership of the particular property under consideration, and reflect such hazards in our capitalization of the *present* warranted net earnings from the property, *using a rate per cent reflecting the estimated future risks.* The two methods are in principle the same, but one is easier and simpler of practical application."[1]

This thesis was attacked in detail in my article of July 1933, entitled "An Appraisal of an Appraiser's Proposals." In that article it was argued in support of Frederick M. Babcock that:

> "while earning expectancy may be close to the present rate of earnings for a number of years it is certain and inevitable that the flow of income will be different toward the end of the useful life of the building. It cannot but somewhat increase the accuracy of the valuation to try to predict these future changes, even though the possibility of doing so in any very precise manner is manifestly impossible."[2]

The details of this argument need not be restated

The January and April 1934 issues of this *Journal* under articles entitled "The Use of Tables and Formulas in Real Estate Appraisals,"[3] carries Mr. Thorson's reply. In this article Mr. Thorson argues:

> "1. That no tables or set of formulas can be devised which may be logically used as appraisal processes in calculating the value of ownership in lessee or fee-operated properties.
>
> "2. That annuity tables employing but one rate of interest (such as Inwood's) should not be used in real estate appraisals except where the rates involved do not exceed 4%."

It would seem that there is some inconsistency involved in arguing that "no tables or set of formulas may be devised which may be logically used as appraisal processes," and at the same time stand in favor of projecting present earnings into the future by discounting them at a rate which takes consideration of both pure interest and the risk element involved. Certainly this latter step is quite as much a formula for solution of appraisal problems as any of the tables which Mr. Thorson scorns.

But Mr. Thorson's formula appears illogical when it submits that *present* income is a suitable capitalization base. The formula virtually projects present income into the future, subject to interest and a risk discount, and assumes that value is thereby ascertained. Were present earnings the basis on which future earnings are estimated, there might be some logic in this procedure. Sometimes present earnings are useful evidence as to possible future earnings; but they certainly are nothing more than evidence—a small bit of evidence indeed! Every appraiser uses a multitude of other factors in arriving at a reasoned judgment. All these factors throw light on what earnings will be, not on what they are. One knows what the earnings are. Fortunately Mr. Thorson seems willing to agree to the valuation of future income as indicated in the April issue (p. 234). But this agreement seems to be more for the purpose of argument than anything else. Furthermore, it is contingent on the adoption of the Hoskold

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1. Thorson, Ivan A., Vol. I, No. 2.
2. Babcock, Frederick M., *The Valuation of Real Estate*, N. Y., 1932, p. 229. The most simple and lucid exposition of this principle which I have ever read was set forth in the July 1934 issue of the JOURNAL in an article by Mr. Babcock, "Depreciation Allowances." In the light of this article, Mr. Thorson's "sinking fund" thesis appears positively untenable.—Author.
3. Vol. II, No. 2, p. 112.

annuity tables as a basis for calculating the present worth of future income. This issue will be treated below.

The gentleman further argues that the real estate appraiser and the security analyst have comparable problems. The analysts of securities have, according to the article,

> "settled down to a method whereby they designate their estimate of soundness of securities by allocating to such securities a rate of yield reflecting the rate of risk."

One may agree that both the security analyst and the real estate appraiser have comparable problems to this extent: they both estimate the probable income to the buyer to be derived from the property being valued. Stocks may earn a variable income in perpetuity, though distant earnings are of little significance in fixing present value. Probable earnings over the next ten years are of the greatest importance in fixing present value. The evaluation of bonds is based on the future periodic yields of interest plus the present worth of the face value at maturity. In neither the case of stocks nor bonds, is it probable that the flow of earnings would resemble that derived from lessee—or fee-owner operated properties. Of course, in the case of land there may be earnings in perpetuity, or loss as the case may be, not dissimilar to the returns on stocks; but improved properties are quite likely to release a declining flow of earnings over a period of years in somewhat the fashion elaborated by F. M. Babcock.[4] The stock analyst estimates the probable flow of earnings from the stock investment before he undertakes an estimate of the value of the stock. The bond analyst knows the face value of the bonds and knows the contractual flow of earnings over the years. The real estate appraiser may have a contractual return to evaluate in the case of a long term lease, and an uncertain variable income with a probable declining flow of earnings toward the expiration of the life of a leased or owner-operated building. Obviously in each of the three cases—stock, bonds, real estate—special consideration is given to the risks involved.

The securities analyst and the appraiser must have in mind the risk of each *particular industry* or real estate *use type;* the risk pertinent to a *particular corporation* or a *particular real estate* investment; the risk inherent in our *changing monetary base;* the risk that capital will be more or less plentiful thus changing the *price paid for savings.* These and other risks are important elements in determination of the worth of a particular investment. These risks have an important bearing on variation in the probable flow of future earnings. They make estimates of the future flow of earnings quite difficult to predict. They make the resulting evaluation based on uncertainties a questionable one indeed. But any statement of value of an income bearer is in and of itself a prediction of future income. Every price offer for a bond, for a stock, for a railroad, for a store, for a farm, for a dwelling is *ipso facto* a prediction of future dollar and annuity returns.

Mr. Thorson emphasizes the necessity for estimating the risk elements involved in appraisal; yet he says, "the attempts to make definite predictions . . . is obviously misleading." Nevertheless, it is evident that the use of interest tables weighted for risk *is* prediction. The very process of appraisal is prediction.

The second thesis of Mr. Thorson, "that annuity tables employing but one rate of interest should not be used in real estate appraisal except where the rates involved do not exceed 4%" will now bear examination. This thesis favors the Hoskold an-

4. Ibid.

nuity tables developed from a "safe rate," or pure interest, with a "risk rate" separate.

What is the proper basis for determining an interest rate which will discount risk as well as account for the pure time elements in evaluation of future income? If one goes back to the securities analyst problem, one will note that there is a going market rate for pure interest and also a going market rate for different degrees of risk. In practice the two elements are so inextricably interwoven that it would be difficult to distinguish them. Yet it is not so important that they be distinguished. The important fact is that security buyers insist upon receiving a given rate of return for given types of investment. This is measured by the price-earnings ratio. When the market is highly speculative and very optimistic, the price-earnings ratio is very high and the reverse is true during periods of pessimism. Reasoned judgment would tell an investor that at times the price-earnings ratio is too high, and that at other times it is too low. This is equivalent to saying that at times the public uses too low a discount rate and that at other times it uses too high a discount rate. The task of the analyst, the task of the appraiser, is to predict or estimate a normal price-earnings ratio or at least one which can be regarded as lying between the extremes, and to predict the possible extremes. Thus a discount rate of 10% means a price-earnings ratio, for perpetuity, of ten. It is not necessary to know that this price-earnings ratio is the result of a given amount of discount for the time factor, i. e., for pure interest; and the other part, the result of price adjustment based on risk. It is only necessary to know that the typical,—the probable high and the probable low,—price-earnings ratio for given types of risk actually is such and such. This is a market phenomenon. It is as truly applicable to real estate as to stocks or bonds.

Thus it would seem that the Hoskold Tables, which Mr. Thorson commends so highly, are useful to a philosopher because they do abstract pure interest from risk interest in their composition. But this abstraction, though useful in economic theory, is almost impossible of empirical determination. The practical application of any discount table need not call for this abstraction. To repeat, there is a typical market rate for given classes of risk. This typical market rate, the possible highs and the possible lows, is the one in which the appraiser is interested.

The usual discount table is not 10 and 10 as Mr. Thorson contends. It is not necessarily a discount rate of 10% and a risk rate of 10%. It may just as well be regarded as the possible averaging or compounding of any two of a multitude of possible rates which average 10%. The weight given risk and the weight given the annuity factor by the market cannot be determined empirically. The appraiser only knows the possible variations in the price-earnings ratio, which is but another expression for the discount rate. Thus the insistence on an annuity or pure interest figure separated from the risk figure makes possible a double error in selection of rates. It is sufficiently difficult to select the proper price-earnings ratio in a single figure. This single rate is, however, a figure with which the practical business man can deal intelligently.

One would be tempted to suggest that appraisals be made with a statement of the probable error, which statisticians define as "that degree of deviation in the result above and below which any given result is likely to fall."[5] But unfortunately, the theory of probable error is con-

5. Cf. Babcock, F. M., *Valuation of Real Estate*, p. 532.

nected with the theory of sampling of a large number of cases. Each real estate appraisal is not one of a multitude of variables, but is a specific case unlike any other. Hence, in real estate appraising one is unable to use the statistical method of giving a valuation plus or minus a probable error.[6]

One therefore should estimate the limits, high and low, for net income, and limits for the remaining life of the building. The appraiser should present a number of valuations to his client pointing out the basis for his judgment and the possible variation in factors which may lead to a variation in value. The client would be put on his guard. He would see that valuation, after all, is a question of finding a normal price which a fully informed buyer would be willing to pay for the future earnings of a business or a property in view of the uncertainties involved.

6. Day, E. E., Statistical Analysis, N. Y. 125, p. 379.

One may therefore join Mr. Thorson heartily in his concluding paragraphs wherein he says,

"In the appraisal of vacant property in twilight zones where the use possibilities are rather nebulous, I make no attempt to put a definite dollar valuation on the property, admitting frankly that I do not know exactly what the value is; but I do point out the various possibilities and what might reasonably be expected from the property, from an earning standpoint as well as from a sale under various conditions.

"There are few people today who will pretend to predict accurately what the commodity index will be over the next ten years, or even during the next three months. Then why have we any right to think we can predict with any reasonable accuracy the income from property over 20, 30, or 40 years (excepting, of course, a lessor's interest in a well secured lease)? Commodity indexes tie in pretty closely with a good many things, including the probable future income from real estate."

The reasoning of the first of the above quoted paragraphs is applicable over a wider field of appraisal practice than merely that of vacant property.

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The Character of a Profession

FOUR criteria which characterize professional activity are, first, that it is the employment of expert intelligence; second, that it uses the methods of science and publishes freely and openly to the members of the profession the established results of research and experience; third, that in letter and in spirit, it means to live up to a written or unwritten code; and, fourth, that it is actuated by a motive of service to mankind greater than the motive of service to one's self and one's own.*

Henry S. Dennison.

*An excerpt from an editorial in the March, 1934, issue of *Civil Engineering*.—Ed.

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The Relation of the Switch Track to Industrial Property

By LOUIS B. BEARDSLEE

EVERY manufactured product, from the time it leaves the ground until it reaches its destination in the consumer's hands, is in process of transportation. This principle applies whether the raw product is mined or grown. Everything of this nature therefore is concerned with transportation from its inception to its fulfillment of purpose. It is most important then to industry to consider transportation in its various problems of manufacture and its distribution. Today as never before the industries of our country are making their success by reducing the cost of overhead and by establishing a more direct contact with the consuming public. This feature directly affects industrial properties and their values.

In order that the receiving and shipping facilities may properly and advantageously serve a property, much must be studied by the enterprising Industrial Realtor so that he may be competent to work and plan in conjunction with engineers and railroad representatives to see that the operation of the track is assured. Also the various classes of railroad service must be learned as certain types of railroad operation affect the distribution of an industry's output in different manners.

The railroad service problem has its greatest complication in our large manufacturing centers, which generally are in and near our metropolitan areas.

In these beehives of industry two kinds of service are generally considered—trunk line and belt line. There is a difference in service rendered by trunk lines and belt lines.

Trunk lines represent the railroads of our country that function between the various points on their lines and are interested principally in the income derived from tonnage passing over each one's system. If shipments carried by them are destined to points beyond their individual operation, they are transferred to another carrier who takes up the responsibility of transit where the initial line terminates. In case trunk lines have no physical connection with one another, the connection must be made by another railroad organization, which connects the two, and this line is generally a belt line. It is the belt line's function to operate as a connection between trunk lines.

Trunk lines operate at fixed charges for shipments on a basis of cost for transportation of one hundred pounds according to either class, or commodity rates which are determined to be fair to both railroad and public, and are so regarded by the Interstate Commerce Commission of the United States and also by State Commerce Commissions. The power is given these public bodies to regulate the operation and charges of our railroads. Belt lines generally operate on a connection charge per car or per hundred pounds, regardless of classifications, and the charge for their service is paid out of the through rate of the trunk lines based on the distance from point of shipment to destination. In other words, trunk lines may be considered as running from point to point, while belt lines are connections between trunk lines in a certain area.

Switch track facilities from trunk lines were originally intended for the movement of carload traffic to and from plants having such facilities, and, under conditions where the revenue accruing to the line haul reached or passed a certain commensurate sum, additional trunk line or belt line delivery charges being absorbed. This condition still prevails. In Metropolitan areas an additional service is rendered whereby under certain limitations, or minimums, less than carload traffic is accepted by a trunk line for points on its line, and, if the minimums per road are observed, then to points beyond. Less than carload shipments may also be routed to points on foreign lines under minimums governed by their classifications and the trunk line furnishing the switching receives its charge out of the through rate from the road receiving the line haul.

Because belt lines are strictly freight carriers and serve properties not always reached by trunk lines, switch tracks are secured from those lines also which, while indirect, are neutral and given an absolute freedom of routing. Belt lines have also established, without a great additional investment, a service of handling less than carload freight that has proved popular with industries seeking locations.

By establishing universal freight stations at certain strategic points, the belt lines can accumulate such shipments at a receiving station, and after sorting as to routing, can make up cars for various lines and deliver to them for re-classification at the trunk line make-up stations.

One of the greatest industrial centers in the world, where especial attention has been given to such shipments, is Chicago. At that point a peculiar condition exists. Twenty-seven of the country's great trunk lines either arrive or depart from that point—no line runs through. This creates an enormous amount of interchange traffic, and supplies reason for the successful existence of ten belt line railways. Some of these belt lines are actually belts, while some are organized primarily to serve a large industry and act as belt line connections by traffic agreements to run over other lines to make their physical connections.

I think a description of the railroad service, as it is practiced in the Chicago Territory, can be taken by us as an outstanding example of switching arrangements in their broadest sense, and will be a good subject, from the act of installing the track to the uses to which it is afterward put.

SWITCH TRACK IMPERATIVE

In the first place no industry should consider the purchase of property without definite knowledge that the railroad can and will serve it. Because property adjoins the right-of-way of a railroad is by no means conclusive evidence that a switch track can be obtained. The Industrial Realtor should take no chances on this point, but should make sufficient investigation to know the entire situation of each and every property submitted to his customer. He should feel a moral responsibility to know that the railroad can serve before he lets the industry purchase.

One day an industry, which I had located on a lease, decided to buy their own site and build. I had been forgotten and they were waited upon by a Broker who dealt in flat buildings, etc., who prevailed upon them to buy a small piece on a street in the center of which ran a long lead railroad track. They asked the Broker about getting a switch track and he told them that there was no question about it,—the railroad was in the street and all they had to do was to run off a spur to serve their building. Well, they bought the ground and built a nice little building, car floor

level, and everything fine for track. Then they went to the railroad and told them they were ready for them to put in a switch track. The railroad explained that, to put in a track to serve the building, they would have to go back quite a way and it would take up the sidewalk space, not only of their property but of the property to the south which was improved with a grocery store, and the owner would not permit such an arrangement unless they bought his property (which was worth about $10,000.00) for $30,000.00, and even if they did this and could get an ordinance to cross the street and use the sidewalk space, the railroad was so congested at this point that it could not serve the property anyway.

They could have had a good piece of property with track just as well had they gone to an Industrial Realtor, but then they did not differentiate. To them a real estate man was just a real estate man and nothing more. The man who sold them the property knew nothing about switch tracks and cared less. He wanted to sell this property for a good commission and didn't concern himself as to the ability of the purchaser to use it.

HOW TO APPLY FOR A SWITCH TRACK

The first thing for an industry to do is to consult the industrial agent of the railroad. It is his business to know the situation as to the operating department, etc. If the railroad can serve, an application is made out for switch track facilities. In this is the name of the concern, the character of its business, the amount of traffic handled during the preceding year, the amount it expects to handle after getting the switch, and the signature agreeing to pay for the cost of right-of-way, material, and construction.

This application passes through the operating department, the division superintendent, the engineering, drafting, surveying, and traffic departments, and finally an estimate is arrived at for the work. This amount is put up. It generally represents the cost of material, plus ten percent, and labor plus fifteen percent—these percentages to take care of drafting room, engineering service, etc., rendered by the railroad.

A plat showing the property and the proposed track is attached to the contract. You can then begin to consider that what you have bought is surely switch track property.

COST OF INSTALLATION

In putting in a switch, there must be a switch point, which costs from $500.00 to $650.00, about seventy-nine feet of tangent track before the turnout begins. Then it is a matter of straight or curved track as the case may be, until the bumping post is reached, which costs about $125.00. Straight track costs about $3.50 and curve track about $4.00 per lineal foot, including a certain amount of grading or fill. This is for grade track operation. Coming down to grade from an elevated track costs more, particularly on account of the slope fill. An elevated switch may cost from $20.00 to $60.00 per lineal foot, depending on its construction whether piling, concrete, or steel.

There is also being constructed more and more a depressed switch track. This is to fit one story buildings with ground level floors to save the cost of fill and still maintain a level between the building and car floors. This well, or depression, should be sewered, particularly in the north where rain and snow freeze and would therefore put the track out of use. In addition to the cost of the switch track, such construction will run about $1.50 per lineal foot. On switch tracks that ascend, no average, or approximation, can be

given as so much depends on the amount of fill. Most engines can conveniently operate with fair leads on a grade of from one and one-half percent to two percent.

CHARACTER OF SERVICE

Let us consider the character of the service rendered. We have gone into the carload traffic, both in and out, and have touched somewhat on outgoing less than carload traffic by trunk lines, but not fully by belt lines. In the Chicago District, the belt lines have inaugurated a service, under which they place at the shipping platform of the industry having a switch track from its line, empty cars into which may be loaded outgoing less than carload freight without regard to its classification, destination, or routing. These cars are pulled on schedule time to a universal freight station where the shipments are sorted and sent to the trunk lines over which the shipments are consigned. This service is rendered free to the shipper, and the charge that accrues to the belt line for this service is paid out of the through rate by the trunk line receiving the freight. Some belt lines are so situated, from a standpoint of their universal freight station and the connections of the trunk lines, that less than carload freight incoming is switched to the belt line by the trunk line and delivered by the former to its industries.

The service of the outgoing less than carload freight is the rule, the incoming feature being inaugurated by but few lines. This feature operates at a very great saving to the industry as it eliminates the necessity for teaming such freight to the various freight stations of the many lines. It also does away to a very great extent with wear and tear occasioned by trucking. This service is known as twenty-four hour delay service, as theoretically it takes twenty-four hours longer for this operation than if the shipments are delivered to the outbound freight houses of the various lines over which the shipments are consigned. In some instances, however, entire carloads are made up for gateway points and these cars can be traced to destination and the movement accelerated thereby. This service has done a very great deal in the successful building up of large tonnage producing centers known as Industrial Districts.

In country towns outgoing less than carload traffic is sometimes handled by the trap car method. This consists of placing a car at the industry, and after receiving its shipments, it is pulled to another industry for the same purpose and when all have been served, the car is pulled to the main track and is put in the freight train going in the proper direction.

INDUSTRIAL DISTRICTS

Industrial Districts are the solution of not only many of the railroad problems for handling freight, but the proper and efficient caring for industrial development in a community. By bringing industries into industrial districts, it is possible to so control the character of the improvements and their operation that ideal zoning requirements can be effected for the good of the community at large. One of the best methods of serving industrial districts by switch track is the parceling out of a rectangular portion of the district and bringing a grade switch through its center in a diagonal direction. Private streets are introduced to surround the parcel of ground on at least three sides. This makes it possible to divide the area into various sized tracts so that the maximum car capacity can be obtained with the minimum square footage of the site. In some districts building lines are demanded generally of from fifteen to twenty feet and

the exterior walls of the building are of paving or face brick on all four sides. It is also possible to control the power plant operation so that the district will not become a smoke nuisance.

In one development, with which I am familiar, only hard coal can be used. Oil as fuel is replacing coal and gives a clean, efficient operation, and is not prohibitive in cost of installation or operation. This principle, of course, will not apply in every instance, as it is still recognized that many wood-working industries can manufacture their own steam power economically by the use of refuse for fuel. It is not my meaning or intent to recommend one type of fuel as against another.

In one great Industrial District it has been found that the improvements of the district from a track standpoint can best be carried out in forty-acre tracts and one or two service leads have proved sufficient by being connected at one or more points for switching, the private industry tracks coming off of these tracks to serve the industries.

LOADING PLATFORMS

In this day of one story developments, while no rule can possibly be determined upon, it is found that the average industrial building is adequately served by a car capacity running alongside of the building of about two car lengths to every 20,000 square feet. The average car length of track is about forty-three feet, although there are many cars used today, which would require fifty feet of track and I believe that forty-three feet should be taken as a minimum. It is also found that in properly handling the traffic between the car and the building that a ten foot shipping platform is much more efficient than narrow platforms which used to be constructed. These platforms also are now protected by canopies instead of being left open to the weather as in the old days. These canopies are sprinklered if the building is sprinklered.

MODERN CONSTRUCTION AND LAYOUT

In the building themselves, modern builders of one-story buildings are getting away from the old idea of having posts every sixteen feet. Post centers of twenty feet and up are getting to be the rule. In a great many instances, truss construction is employed where too much shafting is not to be installed in the plant.

One important feature, which is being more and more constantly observed in the improvement of industrial switch track property, is to maintain an approximate level between the car floor and shipping floor of the building. The wise industry is also taking care of reasonable expansion, generally about one hundred percent of the building area. To put a small building on ten or fifteen acres of land is not only unnecessary, but ruins the proper industrial upbuilding of a community. Cheap buildings are no longer being built. It is the efficient building that keeps down the overhead and pays the dividends. Daylight is one of the few great elements in manufacturing that can still be had without cost, and the type of building known as one hundred percent daylight is the modern and efficient building of the day. The building should fit the industry, not the industry fit the building.

It should be borne in mind that railroads have a right to operate in an efficient, economical manner, and they are doing their switching with road engines more than they used to. This requires a greater radius of curve than was employed in the old days. Most roads today can not operate efficiently on better than a twenty degree curve, and it is necessary to have a clearance of eight feet from the center line of track on a tangent track and eight

and one-half feet clearance on a curve. The laws probably differ somewhat, especially on overhead clearance. In Chicago the overhead clearance is about twenty-one and one-half feet, so that in running a switch track under a crane, or into a building, a clearance should be maintained of twenty-one and one-half feet from the top of the rail. This also applies in the yard where there are overhead obstructions.

VALUE OF SWITCH TRACKS

Of all the elements that go to make up the value of industrial real estate, probably the influence of switch track facilities is the most outstanding and determinable. The more service that can be rendered to a piece of property, the more that property is worth. While it is difficult to be accurate in determining the value given by railroad facilities, it is very probable that a fair average over the country in most sections would be from fifty to one hundred percent increase over property not having such facilities.

In some of the larger communities where there are both trunk line and belt line facilities the possibility of securing switch track connections from trunk lines will add about fifty percent and belt line facilities about one hundred percent, and it is very often the case that a piece of property can easily be marketed at $1.00 per square foot, with switch track connections, where as it is a long pull to market it at fifty cents per square foot if switch track connections cannot be obtained.

These are some of the highlights in the life of the Industrial Realtor and an appreciation of the relationship of the switch track to industrial property is an important factor in his professional experience.

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Economic Balance in Planning

Certainly some such (growth) estimate is a far saner basis for economic planning than assumed unlimited growth, or the mere following of the policy of laissez-faire.

The speculative debauchery in real estate in cities has surpassed the excesses of the stock market, but it is as yet scarcely appreciated or understood. The blocks and blocks of vacant and obsolete property, industrial as well as residential, constitute an ever increasing burden of overhead expense. Our cities are too much like the apple which is firm and attractive on the exterior but slowly decaying around the core.

Commercial and multiple dwelling uses of land combined cannot absorb five per cent of a city's area and yet a large per cent of every city's area is usually subjected to speculation for these two uses. This practice is inviting property blight upon a very large scale. The next step in city planning should be comprehensive planning of the whole city area for purposes of economic balance and the prevention of waste.

HARLAND BARTHOLOMEW.

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Reproduction Value Vs. Reproduction Cost of Residences

By J. W. GRAHAM, M.A.I.

THE value of a house may not equal the cost. In fact, it seldom does. Immediately after construction, all houses begin some degree of depreciation. One form of depreciation is obsolescence. A high degree of obsolescence and depreciation on a new house may be applicable immediately. This upsets the argument that a new house is worth what it cost or even what it would cost to reproduce it. It is necessary to analyze each and every residence in order to place on it any kind of a value and, especially, a reproduction value.

The growth of the erroneous idea that reproduction value is equal to or exceeds reproduction cost became a very popular fallacy during the world war, and for several years thereafter. As a matter of fact, residences were built and sold at a figure above the actual cost, plus a reasonable profit. The demand was greater than the supply. Residences which had been built years ago actually sold for as much as twice the original cost. People speculated in the buying and selling of residences. One would buy a house and sell it at a profit before it could be occupied. The demand for housing was such that even old houses were bought at prices, which, by a little thought of the future, could not have been regarded as reasonable. The actual turnover of houses in this period amounted to not over 10 to 20% of all the residences and yet the story of what so-and-so paid for his house last year, and what he had just sold it for, traveled fast. Many owners who would not sell had actual attractive offers while this period of demand lasted. Added to this large number were almost all the remaining home owners who, on account of this state of affairs, fondly imagined that their houses were worth these fancy prices. They did not stop to think what would happen when the demand had been supplied.

Then came the time, along about 1925 and 1926, when the country, as a whole, practically caught up on its residence demand. On and after that time, very few houses could be bought and sold at a profit. The supply became slightly greater than the demand and people became more discriminating. Naturally, the older houses were abandoned. The stopping of immigration left the United States without that element of foreigners who had heretofore usually taken over these abandoned homes. Many builders, spurred on by the supply and material furnishers, and easy financing, failed to heed the fact that supply had overtaken demand. This caused a greater surplus than normally would have been the case. The idea that a residence was worth more than it cost was so thoroughly entrenched in the minds of the public that when the time came that they could not get this profit, many private houses were withdrawn from the market. This removed considerable competition and allowed the new houses, built on a speculative basis, to be more readily sold for an additional period. The speculative builder did not suffer as soon as he might otherwise have done. He therefore continued to build. This condition, coupled with the fact that owners who withheld their homes from the market, except at an increase in price, created a surplus of residences. Then came the day of reck-

oning in the latter part of 1929. Since that time, the forces controlling prices have been the exact opposite except that the home owner, as a rule, still thinks his house is worth what he paid for it. He insists that by spending less than $100.00 on paint and paper, his house is worth as much as ever. After all is said and done, it brings the appraiser to the question of depreciation by obsolescence, the changing of the neighborhood, and the trend of the district, as well as the changing of styles in houses, and the whims and fancies of the occupants for the more modern conveniences, which are so much more satisfactory in houses built originally to include them.

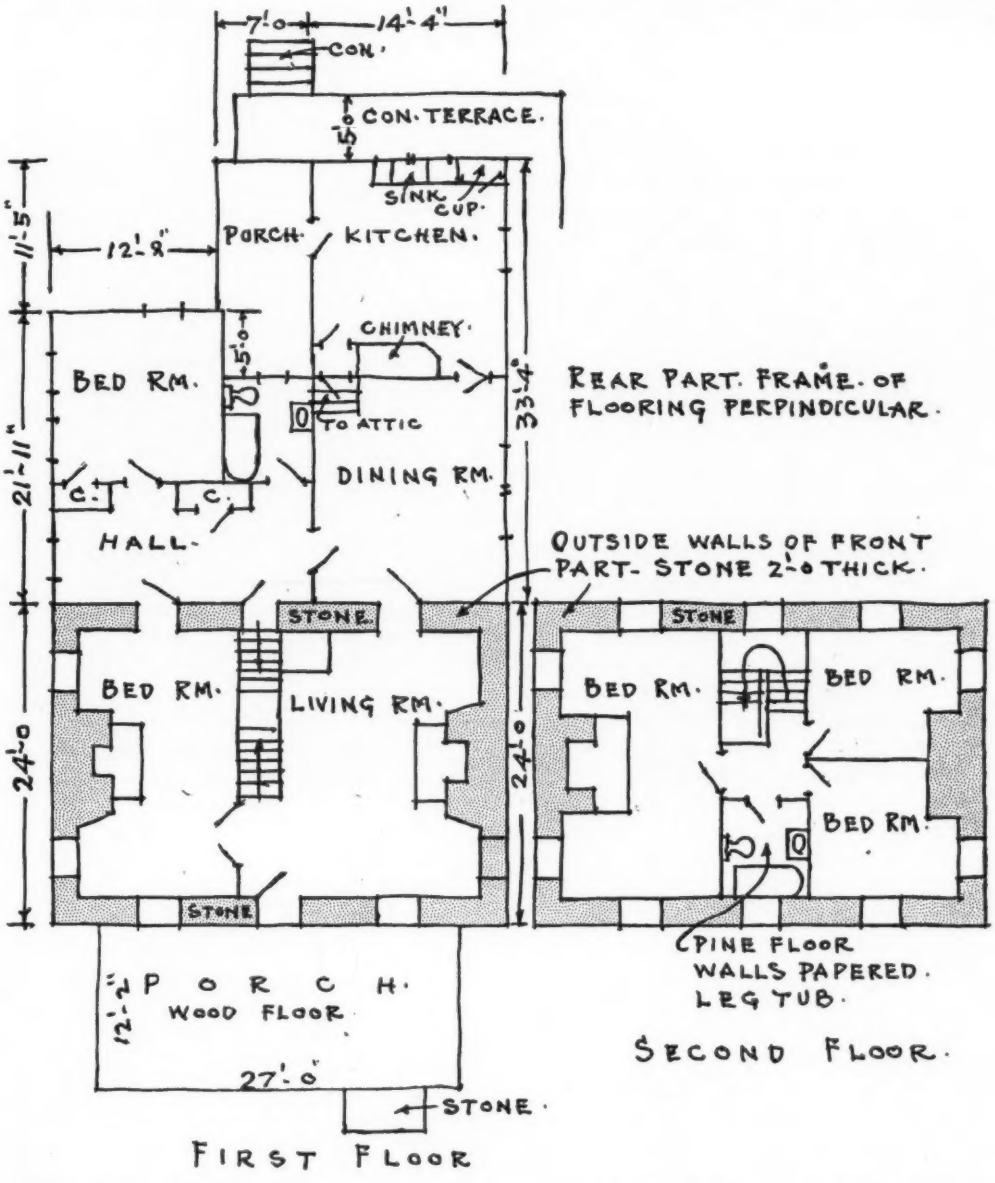
There are a number of elements of value which tend to make value vary from cost. A great many residences are built by the owner for his own use and oftentimes include many features which that particular owner and few others want. Such features may include a special arrangement of the rooms to suit a particular whim, or built-in expensive and superfluous conveniences.

There is a truism that "one is judged by the company he keeps," which is also very true as to houses. Better values can be preserved if houses of fairly the same general nature are built in the same neighborhood. If a large two-story house is built in a small bungalow section, the large house is soon spoken of as that "big barn." On the other hand, a small bungalow sandwiched in a large house neighborhood is spoken of as the "pill box" next to so-and-so. In either event, poor judgment was used by the builders and both will suffer a loss eventually, which means the value never was there, even when the cost attempted to reflect it.

ERECTED IN 1800

Then, what the would-be buyer thinks of a house has a great deal to do with its value. The likes or dislikes of the purchaser raise or lower the value, while the cost of labor and material controls the cost.

By way of illustrating this point of



value versus cost, I will cite a very old, but well-preserved residence on which an actual appraisal was made. The appraisal proved so interesting and brought out so many points on which there is usually contention that I will first give you a detailed description and then the controversial points. The house is a large, Southern

Colonial type, built of stone. The materials used are of the best and the construction is of such a type that for the most part, the building is practically as structurally sound as when it was built 134 years ago. The present owner lives in the house and also uses it for a tourist home and tavern.

The site still carries five acres of ground with it. The house is located in a small village thirty-five miles from a fair-sized city. It, at one time, accommodated a large farm, which has long since been divided into many small farms. The neighborhood is strictly residential, old and static, and within one mile of schools, and churches, and on a main highway with transportation. It is in a small village, about twenty-five per cent built up. It has city water, septic tank, and electric lights, and the land is level to sloping and rather well landscaped. The house is plastered and papered and has pine floors. There are two baths, with old-fashioned fixtures.

The house was remodeled in 1894, and again in 1902, and does not need repairs now. The roof is metal. The basement is full under the two-story portion of the house. After research it develops that this village and surroundings have twelve families who could afford to live in houses of such size and value, and that half of them already have houses of this type, and that the remainder live in more modern houses or contemplate smaller modern houses.

There were no new industries contemplated, and even so, the chances were small for them to bring a possible tenant for a house of this kind. It has outlived its usefulness in this location. A new house just like this one reproduced nearby would be obliged to take its share of the lack of desirability along with the original house. As a matter of fact, it would add to the lack of desirability by increasing the supply. Certainly the reproduction value is far from the reproduction cost in this case.

The house contains 2,956 square feet of floor space which a reliable contractor of the community advises he can duplicate for $7,390.00. To this amount would be added the value of the outhouses and land bringing the reproduction cost to $9,365.00. The home owner who keeps the house in tip-top shape in every way insists that it is as good as new, and is therefore worth the above figure. However, the appraiser used the three point appraisal method, as used by the Government in the Home Owners' Loan Corporation. He estimates the reproduction cost, less depreciation, and considering the effective age of the house on the summation basis, as $5,670.00. He finds that the capitalized rental value is $4,500.00. By using the three point equation and adding the three figures and dividing the total by three, a value of $4,806.00 is the result. Thus you will see that the final result value is greater than the reproduction cost, less depreciation. It is likely as values approach normal, the reproduction value, less added depreciation until that time, will bring this value down, while the market value and rental with an upward tendency toward normal will strike a happy medium very close to the final figure of $4,806.00.

To look at the house, it might so strike the fancy of someone that he would pay a fancy price for it. In a case of this kind, the appraiser should not confuse price with value. If this same house were closer to a city or in other localities, the number of prospective fancy-struck buyers would be increased, thereby creating a demand which would reflect in the value.

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Legislation and Real Estate Values

By GEORGE L. SCHMUTZ, M.A.I.

THIS subject is so peculiarly complex that we should first lay the foundation upon which any conclusion is based. We will therefore, first embark upon a discussion of Economic Relationships.

We will also attempt to show that Economic Productivity is a matter of commanding a Price—the response to price paying disposition; and, that Economics is becoming less a system of pecuniary logic and more a Science of Human Behavior.

Also, we will endeavor to show that goods are produced as a by-product of the process of earning profits; and, that prices appear to fluctuate more in relation to the state of public confidence than in relation to the quantity of currency or credit.

Then too, we will point out that all business enterprises, and all Nations as well, are so bound to each other by industrial, commercial, and financial ties that none can prosper and none can suffer without affecting others; that the good of each is always and inevitably bound up with the good of all.

We will also show why prosperity and depression crises are primarily phenomena of price disturbances; that eras of great prosperity generate within themselves the seeds of depression; and, that eras of depression generate seeds of prosperity. Not unlike the swinging of a pendulum, we have ever recurring eras of prosperity and depression, a most welcome belief today.

The price level is ever in a state of flux —ever adjusting to warranted levels. In these adjustments the market invariably over-extends itself, either downward into depressions, or upward into booms. Witness both the stock market and the real estate market these past four years. We thus see the necessity for an understanding of the causes of price fluctuations—the cyclical movement of prices which alternately create booms and depressions.

Beyond any question of doubt, the most powerful influences affecting the price receivable for real estate are those conditions commonly called booms and depressions. Those customarily considered factors in real estate valuation, such as the population of the city, rate of growth of the city, population drainage area, transportation facilities, character and extent of the development of the neighborhood, and the like, are all of but small moment when contrasted with the devastating effect of a depression, or the stimulating influence of a boom, both of which are conditions invariably born of violent price fluctuations.

A great many causes have been held responsible for the recent period of falling prices and the attendant phenomena which have characterized the depression. Some attribute the increased use of machinery for the unprecedented increase in unemployment, and this mark you, in face of the fact that the percentage of the Nation's population gainfully employed has increased each succeeding decade for the past fifty years, according to the Census. As a matter of fact, machinery has tremendously increased the standard of living, decade after decade, to such an extent that the common laborer of today fares better than royalty of a century ago.

It is a strange quirk of human nature that people are prone to believe, not what a careful survey would warrant them in believing, but rather what they would like to believe, as dictated by personal desires.

It is equally true that people arrive at conclusions without first validating the premises upon which the conclusions were founded. Surely, the behavior of the human animal in a complicated environment is strange indeed.

The Depression is also said to have been caused by "over-production," or by the "over-extension" of credit, or by the abnormally high percentage of "unemployment," as well as by numerous other conditions equally as unsatisfactory of explanation. These statements merely explain one mystery in terms of another. If, for illustration, "unemployment" is the cause, we are naturally led to inquire — "what brought aboout the unemployment" and, having satisfactorily answered this question, our inquiry then leads us to inquire as to the cause of that which caused the "unemployment."

We thus infer, and correctly so, that all economic phenomena are characterized by a series of Causes and Effects, the effects in turn becoming causes of still later effects. Usually, there are numerous transitions from the original cause, which not infrequently is born in the public mind, to the ultimate effect.

The immediate cause of the Depression and, ipso facto, the demoralized condition of the real estate market was the rapidly falling price level. Of this there can be no doubt. Let us now discuss the effects produced by this phenomenon before considering its cause. This leads us to an academic consideration of how production is carried on.

There are four factors engaged in the production of goods, or the rendering of services, namely — Labor, Co-ordination, Capital, and Land. For illustration, in a furnished apartment house, Labor is represented by the manager, maids, and others rendering personal services. These have the first claim upon the gross income of the property. If the wages of Labor are not paid, the supply of Labor will cease. Both natural law and statute require this; even slaves must be fed.

Next in the order of preference are the expenses of Co-ordination, that is, those factors necessary to co-ordinate the offices of Labor, Capital, and Land, and weld them into a productive unit. In this category comes the costs of public utility services such as gas, electricity, water, telephone, etc. These must next be paid, if the supply of such is to be continued; and, a continued supply is essential to the continued production of rental income.

Then thirdly is the cost of Capital which is represented by interest-on, and amortization-of, the cost of the Man-made portion of the project, that is, the building and furnishings and equipment. Capital has a claim junior to those of Labor and Co-ordination, and receives its compensation only after the first two have been paid. If the demands of Capital are not satisfied, the supply of Capital for such enterprises will disappear.

Last, and least, in order of preference is the Land which furnishes the location and supporting power for the other three factors. If any residue be left from the gross income after the costs of Labor, Co-ordination, and Capital have been satisfied, such sum is imputable to the Land for the part it plays in the production of income. We thus see that the nature of Land is residual, and, that its price will fluctuate with the quantity of the residue representative of its earnings. When that part of the gross income imputable to Land becomes inadequate, or disappears, Land freezes, activity ceases, and the market becomes demoralized. And history has shown that the residue imputable to Land does fluctuate—from zero to abnormal heights.

Now falling prices invariably create a

condition of disequilibrium amongst the productive factors just mentioned, that is, a condition in which some of the factors receive more than their normal share of the gross income, and others less. For example, if labor or public utility services or taxes receive, or absorb, more than their normal percentage of the gross income, then Land must receive less, and the price of Land must fall. A falling price level, irrespective of the reason therefore, is directly responsible for the decline in real estate prices and all those unhappy occurrences of a depression era. Let us see why.

History shows that the cost of producing the gross income does not fall concurrently with the decline in prices receivable, nor in like percentage. Prices drop first, the cost of production falls later. For illustration, Labor always stubbornly resists reductions in its nominal wage; Taxes are slow in moving downward and then only after a lag; and, the costs of public utility services are lowered only after great pressure, and a lapse of time. Thus, prices receivable for goods, or services, move downward but at the same time, the cost of production does not. The margin of profit becomes less and less and finally disappears. Let us see what effect this produces.

Profit is the incentive to produce. Man doesn't engage in business for the privilege of going broke. Goods are produced as a by-product of the process of earning profits. When a profit to the entrepreneur disappears, curtailment of productive activity becomes imperative. This is first accomplished by reducing the payroll—by increasing unemployment.

With an increase in unemployment there comes a decrease in the purchasing power of people, and an attendant decrease in consumption. This leads to further enforced curtailment of production; greater unemployment, and a still further decreased purchasing power and consumption which is accentuated by "hand to mouth" buying. This vicious cycle is the outstanding phenomenon of the downward movement of prices which inevitably leads to disorder and confusion in business, and still lowered prices.

We thus see how falling prices are responsible for decreased employment, decreased consumption, and a reduced Standard of Living. We further see that, with prices shrinking and debts remaining unchanged there comes a diminution in ability to service debts—to pay either interest or principal. Incomes shrink, equities disappear, and the burden of debt becomes oppressive—all due to the disappearance of profit which was dissipated by the falling price level.

Stated differently, the existence of a profit to the producer controls the rate of production, the rate of consumption, and the standard of living. In view of the memory of the horrible nightmare of the past four years, this is incontrovertible. Having now shown the disastrous influences attendant a falling price level, let us investigate backward for the purpose of ascertaining—why our price level should have fallen.

History adequately proves that the prices of all commodities rise and fall more or less in unison in any one country and, that the price level of all Nations tends to do likewise. The Statistical Year Book of the League of Nations shows that the gold prices of goods in the United States, Great Britain, France, Germany, Italy, and other important nations all have moved more or less together, altho with time lags.

All business enterprises in any one nation, and all civilized nations on the face of the globe are so bound to each other by industrial, commercial, and financial ties

that none can prosper and none can suffer without affecting others. The good of each is always and inevitably bound up with the good of all.

This is well illustrated with the statement that the prosperity or suffering of the farmer is felt by the factory worker. As the farmer prospers there comes to him an increased ability to purchase the products of the factory. This leads to an increase in manufactures accompanied by increased employment and later an increase in the nominal wages of factory employees. But, if the farmer suffers from the injurious effects of decreased prices for that which he produces, his purchasing power declines and his ability to buy the products of the factory becomes less. This leads to his decreased consumption and therefore, decreased factory production which is accomplished by decreasing factory employment and payroll. Thus, conditions adversely affecting the farmer must adversely affect the factory worker. And, the converse is equally true.

Statistical history also shows that, when the price level of one Nation gets materially out of line with others, the price level of the more fortunate of Nations is set by the price level of the less fortunate. Thus, World prosperity is not so much affected by countries enjoying prosperity, but more so by those in the throes of a depression. Let us see why this should be so.

Fundamentally, the price level of all Nations is set by the prices receivable for goods entering into International Trade. If Russia can sell wheat in the World market at 50c, this price establishes the maximum that the United States can get for its surplus, irrespective of its own internal price level. And also, the price receivable for any excess production tends to set the price of the whole.

Now then, inasmuch as each nation produces more of some commodities than it consumes, such excess must wend its way into the World market. It thus becomes apparent that world prices must be related and, that the price level of the less fortunate of Nations will drag down the price level of the more fortunate.

By way of illustration of how the poor ofttimes exerts a greater influence than the good, if a "white collar" American marries a low caste semi-aboriginal female, he does not raise her to his own standard of living, but sinks to hers. A barrel of good apples does not render edible a rotten one, but the one rotten will spoil the good. And also, if a good $3,500.00 modern stucco bungalow is erected in a district fairly well built up with old $1,000.00 frame shacks, the better structure does not raise the tenor of prices of the shacks, but the shacks drag down the price of the good.

Stated differently, the price of any commodity is not set by what the most able can afford to pay but tends to hover about that point at which the least able can buy. The price of shoes is not set by what the rich man can afford to pay, but rather by the ability of the poor. And again, the price level of all Nations tends to be set—not by the price level of the most able of nations, but by the least able. Why this should be so is partially explained as follows:

First, because of its own lower internal price level, the less prosperous of nations enjoys a competitive advantage in the World market. Likewise, because of the same fact, the less able of nations suffers a decreased ability to purchase the exports from the more prosperous of nations. This enforced curtailment of imports into the less able of nations tends to dam back in the more prosperous countries a portion of its normal exportable surplus, or overproduction, the result of which is an over-

supply and consequent reduction in price in the more prosperous. And last, but by no means least, the less able of nations suffers a decreased ability to service its obligations to the more able and thus reduces the income of the latter.

Having now shown how a falling price level in one nation will tend to pull down the price level in another, let us inquire as to why there should have been a recession in prices in that nation which became the less favored.

Strange as it seems, it was the more successful of nations which, by capricious governmental actions, caused the lowering of prices in those which became the less successful of nations, and which was directly responsible for lowering its own price level. The situation was not unlike the biblical Sampson's pushing apart the pillars in the temple to his own destruction. Here is what happened:

The two greatest and most prosperous nations on the face of the globe were America and France. They were creditor nations by wide margins. Almost the entire civilized World was in debt to them. They both insisted that debts be paid and, at the same time erected inconsistently high tariff barriers. This prevented payment in the only possible way—with goods. These two incompatible actions simultaneously pursued were just as sensible as an attempt to ride the same horse in opposite directions at the same time.

In the final analysis, International Debts, if of any appreciable magnitude, can only be paid in goods or services. This is for the very simple reason that there is not now, and never has been, enough monetary gold in the entire World to perform this service. If payment in goods is refused, that is, acceptance precluded by unreasonable trade restrictions, then gold must be used as the medium as far as it will go, or as far as the debtor is willing to permit its own debasement.

And at this point let it be remembered that, for the fifty years preceding the World War, the United States was the World's greatest debtor nation. It owed foreign investors sums tremendously greater than were owing it. Its industries were expanded and its frontiers were extended with capital from Europe. The interest-on, and principal-of, this debt were not paid with gold, but with goods. We annually sold more commodities in Europe than we purchased, and we both prospered. Had Europe erected unreasonably high tariff barriers against our goods then, as we have against theirs during the previous two administrations, we would have been as prostrate then as Europe is now. Fortunately for itself, for us, and for humanity, Europe pursued no such destructive policy; it remained for America and France to disrupt the social and economic equilibrium of the entire civilized World.

We now arrive at our next point. The falling price level in the less fortunate of nations was primarily due to the loss of gold exported to the more fortunate in payment of obligations—mostly war debts. Let us now analyze the cause of such gold migration.

Gold is not only the international medium of exchange, it is also the basis of wealth and credit in all countries on the gold standard. Roughly, there are approximately $100.00 in wealth superimposed upon each dollar in gold (old basis) and thus, a possible $50.00 in credit for each gold dollar. If gold is drained from any country below its minimum requirement, of necessity that country's wealth must shrink, and a portion of its credit must be cancelled. No alternative is possible.

This curtailment of credit, if rapid and

great, inevitably leads to forced liquidation which gluts the market and lowers prices. In this liquidation, the first to suffer are the high grade securities and commodities pledged with banks for short time loans. Later comes the curtailment of long term credit, such as real estate loans. The mortgage lender very properly refuses to renew his loan in the same amount upon the lessened security—lessened because of lower prices.

For illustration, in December 1932, Great Britain paid approximately 100 million dollars in gold to the United States at one time. This large amount of gold leaving that country in one fell swoop dissipated some 10 billion dollars of England's wealth, and forced the calling of some 5 billions of credit. The disastrous economic effect of this is now history.

However, the exportation of that gold in excess of a nation's minimum requirement will produce no such adverse effect. We ourselves, at this time, could lose a billion dollars of our gold supply without feeling it at all. On the other hand, the receipt of gold in excess of a country's need is not helpful for the reason that the excess is sterilized and thus as useless as a second tail on a dog. Gold is not edible. It is a medium of exchange. We cannot eat it but we can exchange it for things we can eat. If it is sterilized—buried deep in the bowels of the Earth—it performs no useful service to its possessor but may render a disservice to its loser.

We have now arrived at our next point —that the falling price level in the less fortunate of nations, which later dragged down our own, which brought on the Depression, was due to the payment to us in gold rather than in the only normal manner—with goods or services.

We are now led to wonder why these Creditor Nations should pursue such diametrically opposed foreign policies — of erecting impossible trade barriers to keep out goods and, at the same time demanding payment in a perversive fashion. Concurrently pursued, these two widely divergent policies have dissipated some 120 billion dollars of our own national wealth, which has left in its wake a trail of bank failures, bankruptcies, poverty, and suicide.

Public Opinion is responsible for these conflicting policies—no other conclusion is warranted. Unfortunately, the Public, as an aggregate of individuals, believe that debts should be paid, and that tariffs save jobs. A more delusive pair of beliefs is inconceivable. Considered separately, debts can be paid, and doubtless would be paid, if tariffs were lowered so as to permit receipt of the payment. On the other hand, tariffs can be left at their high levels only if foreign debts are forgiven. We cannot eat our cake and have it. Therefore, Public Opinion, which believes that we can collect debts and at the same time have the high tariffs is wholly responsible for the Depression and its devastating, disastrous, death-dealing phenomena.

Public Opinion is the primary cause for the very sufficient reason that ours is a government by Public Opinion. Irrespective of what legislators may believe, few indeed have the intestinal fortitude to vote contrary to mass Public Opinion. The reward for political courage is oftimes political suicide.

The majority is usually wrong; Public Opinion is usually at variance with fact. What most people believe is more apt to be wrong than right. History has all too well proved this to be true. There are more ignorant people than educated; more "dumb-bells" than intelligent; more fallacious thinkers than bright. Is it any wonder that the public is usually wrong? The Public tenaciously clings to beliefs long held, even after science has long since dis-

proved them. The majority believe that the Sun in the Summer is nearer the Earth than in Winter. This is not true. The majority believe that thunder sours milk; that a snake, no matter how dead it may have been killed, doesn't die 'til sundown; that a person falling from an aeroplane is dead before reaching the ground; that powdered glass is poisonous. None of these common beliefs are in any sense true. In believing them, the majority is exactly 100% wrong.

Now specifically, the trials and tribulations of these past few years have been born of the failure of the Public to realize that International Debts must ultimately be settled with goods; that high tariffs do not save jobs but destroy them; that high tariffs are responsible for the maldistribution of gold which lowers the price level in all Nations from which emerges depressions; and finally, that high tariffs lower the standard of living of all people. Let us analyze these phenomena.

First and foremost, it is axiomatic that International Debts of any appreciable magnitude can only be settled thru the exchange of goods or services. This is for the very sufficient reason that there is not now, nor never has been, enough monetary gold in the entire World to service its debt. This becomes more readily apparent with the realization that the World's aggregate stock of monetary gold—old basis—is only about 12 billion dollars while its debt is many times that figure. Therefore, the only possible way debts can be paid is with goods. High tariffs, however, preclude their acceptance.

Now as for high tariffs—they are unquestionably the greatest racket of all recorded history. All the Beer Barons in the nation were small time pikers when contrasted with those vested interests who profit at the expense of the standard of living of the people.

Even high school students of economics are aware that, in the long run, tariffs cannot be beneficial, must be prejudicial and lower the standard of living of all people. The most prosperous area on the face of the globe is a free-trade area—the 48 states of the United States. It would indeed be fatuous to say that we would have advanced as rapidly and progressed as greatly had each state the inherent right to erect trade barriers against each other. Let us now inquire as to why tariffs actually destroy jobs, lower the price of real estate, lower the standard of living, and profit only a few racketeers who maintain powerful lobbies in Washington.

In the selective process, increasing specialization means increasing advantage in the struggle for life. The day of the "jack of all trades" is gone; the day of the specialist is here. The lot of the pioneer is a hard one. Unable to trade, and therefore unable to specialize his activities, he is compelled to be inefficient. Most things he must get along without. No man is sufficient for his own needs in any adequate measure. Fortunately for humanity, men specialize their activities along the lines of their especial aptitudes and thus depend upon one another for their own welfare.

Men in society differ as widely in aptitudes for production, or the rendering of services, as do zones and continents differ in natural resources. A doctor probably would serve poorly as an engineer; the raising of wheat in the tropics is impossible. Man's own welfare and the welfare of his fellow man require that each member of society follow the line of his especial aptitude, so far as his activity is socially useful.

Each then produces a surplus of his peculiar product, a surplus which he can exchange for the surplus of others. Thereby, a larger product accrues to society as a

whole, and a larger total of consumable goods to each individual member of society, thus raising the standard of living of the people.

Nor are the advantages of specialized economic functions limited to the relations between individuals. They are equally manifest in the relations between nations —one to the other. If the United States can raise tobacco cheaper than France, and France can manufacture perfume cheaper than America, common sense dictates that each follow the line of its especial aptitude—that we trade tobacco for perfume rather than produce it at an economic disadvantage.

Now, international specialization is conditioned on the possibility of International Trade. Thru International Trade each nation shares in the products and good fortune of each other. To restrict trade, for example by tariffs, is to interfere with the international specialization of economic activity.

Since the World War the avowed tariff policy of the Democratic party has been economically sound for the first time. This is because of the fact that we are, for the first time, a creditor nation. It is fundamental that debtor nations, as we were from the Civil to the World War, must sell more than they buy; otherwise, they would be unable to service foreign obligations. And, creditor nations must buy more than they sell, else the debt payment to them cannot be received. The World War brought many changes, not the least of which was our reversed debt status—from that of a debtor to that of a creditor nation. This logically entails a reversal of our international obligations and responsibilities, which we have been loath to accept.

The protectionist should realize that—to prohibit imports is ultimately to prohibit exports; and, that the good of each nation is always bound up with the good of all. That part of human ills which Congress can cure is small indeed.

The enactment of laws prohibiting earthquakes, tornadoes, and fires would be equally as sensible as some of our laws today, and some advocated. And, some of our present day laws have prostrated the economic world. I specifically refer to our conflicting foreign policies of high tariffs and debt collection at one and the same time, an inheritance of past administrations. These policies alone have dissipated one-third of the wealth of the entire nation during the past four years.

Tariffs are alleged to save jobs; patent medicines are alleged to cure all ills. Truly the gullibility of the public is amazing. A calm and dispassionate survey discloses that today our tariffs are at their highest level, and our national employment at its lowest level in all our entire history. This may appear as a fortuitous circumstance. I assure you however, it is not. Tariffs and such suicidal policies as "Buy American" are responsible for the strangulation of international trade, have curtailed consumption, and thus production, and finally destroyed the jobs of millions of producers. They have sounded the death knell of that which they are alleged to protect.

Now as for our policy of collecting debts; this has actually cost us, as a nation, about $60.00 for each dollar actually collected. The wealth of our nation has shrunk approximately 120 billion dollars as a natural consequence of our successful collection of 2 billions Stated differently, our foreign debtors owe us approximately $100.00 per capita. We have collected but a very small portion of this at a cost of about $1,000.00 per capita. Surely this is good business in reverse, but just the same an inevitable and natural consequence of our policies.

Next, consider the matter of Inflation,

so ardently advocated by those who otherwise appear as reasonably intelligent people. Germany's horrible nightmare of inflation and repudiation appear to have been forgotten. I know of a case in Germany during those hectic days wherein a debtor mailed 15,000 marks in payment of a mortgage obligation, and mind you, the envelope carried a 2 million mark postage stamp. This 15,000 mark mortgage loan represented the savings of a lifetime which Inflation reduced to a value of less than an ordinary postage stamp.

In Germany, the value of money fell so rapidly that bank accounts were closed out for the reason that the value of the deposit had shrunk to nothing. Prices rose so rapidly that, day after day, money commanded less and less of the world's goods. Workingmen purchased commodities to the fullest extent of their wages each pay day for the reason that the same amount of money a few days later had no value whatever. Obviously, repudiation and ruin were inevitable. Of course, people speak of controlled Inflation. This is just as sensible as speaking of the controlled use of narcotics by a dope addict.

Now as for the monetization of other metals. History shows that this involves a progressive export of the international medium, which is gold; that the currency tends constantly to contain a smaller share of the international medium and a larger share of the substitute. Almost invariably in the final result, monometallism ultimately obtains on the basis of the cheaper metal. As Gresham wisely said, "bad money drives out good."

In conclusion, the greatest of all forces affecting real estate prices is Public Opinion—that which motivates Congress which enacts laws which preserve, destroy, or recreate World prosperity. Legislation affecting tariffs, debt collection, inflation, monetization policies, taxation policies, and the like are the dynamic forces of greatest import to the appraiser. These matters are of infinitely greater importance in real property valuation than all of those local matters so commonly considered.

How essential it thus becomes that the Public be awakened to a sense of its responsibility, and enlightened sufficiently so that it will cease punishing itself. Man's inhumanity to Man has been carried to a point only attained by so-called civilized peoples. The poor dumb beasts of the jungle have never so inhumanly treated their fellow creatures. Possibly this is because the animals have no legislative body to tamper with the inexorable laws of nature and economics.

And finally, the greatest single factor affecting World prosperity, real estate prices, and the prices of everything else, is enlightenment of the mass mind to the point of realization of what Man has done to Man, and, what Man must do to Man if prosperity is to be again enticed into the fold.

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Definition of Terms

By JOSEPH B. HALL, M. A. I.

CONFUSION exists today in the field of real estate appraisal, due to lack of accepted terminology. The same meanings are expressed by different words, with resulting misinterpretations. Progress was made by the former Appraisal Division of the National Association of Real Estate Boards in the publication of the Standards of Practice. Most of the definitions outlined there are still acceptable. Since the preparation of these standards, there have been advancements in appraisal thinking, with the result that some of the definitions there expressed are no longer acceptable to appraisers generally. In addition, those which are correct require more dissemination so that a more general usage will be developed.

The pages of this Journal have contained articles with no unanimity of definition. "Depreciation," for example, has been used by some to mean only physical deterioration, while others have used the term in its broad sense to include loss in value from all sources. "Obsolescence" has been used to mean economic depreciation, whereas it is only one phase of economic depreciation. It is one of the tasks of the Committee on Education and Research[1] to give study to current thinking to the end that a series of definitions may be developed and submitted to the Institute for acceptance. The committee is at work on this matter. Several definitions will be submitted to the membership in the near future through the pages of the Journal. It is expected by the end of the year to submit a series of definitions, probably combined with certain standard procedures, which will take the place of the Standards of Practice. As these various definitions appear in the pages of the Journal, your comments and suggestions are requested so that the committee will have the benefit of the thinking of all members.

This particular paper is directed at the most difficult of all definitions, that of "value." Many have been the definitions submitted for this word. Many are the concepts included in its meaning. By glancing at any accepted dictionary, one can see the different meanings that may be attributed to any one word, the variations in meaning being in proportion to variations in usage of the word. It is therefore necessary for us to define the use of the word before we can attempt to define its meaning.

We are interested in value as it refers to real estate. Real estate is varied. It may consist of a skyscraper on Wall Street, or cut-over land in Arkansas. It may be an income producing apartment building, or a small home occupied by the owner. It may be a factory property specializing in some phase of manufacturing, or it may be a quarry producing limestone. In appraising these various types of real estate, we are interested in determining their value.

Value, as used here, may be defined as the ratio in which goods exchange. Economists have defined value to mean its power in exchange. Taussig in his *Principles of Economics* says, "The value of a commodity means in economics its power of commanding other commodities in exchange." Mills in his *Principles of Political Economy* states, "The value of a thing is its general power of purchasing

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Suggestions and comments from members on the definition for "Valve" proposed in this article are requested by the Committee.—Ed.

1. A Standing Committee of the American Institute of Real Estate Appraisers, of which Mr. Hall is chairman.—Ed.

—the command which its possession gives over other purchasable commodities in general." Values are expressed in terms of our medium of exchange, money. Prices are values expressed in terms of money.

Much of the confusion that exists today is due to variations in the value of money —purchasing price of the dollar. In many instances the price of a property, expressed in money, has dropped considerably, but its value has remained constant —its power in exchange is the same. It still represents the same number of bushels of corn, or bags of potatoes, but the purchasing value of the dollar has increased—the commodity index is down.

There have been several articles appearing in this Journal which have indicated that this variation in price of a dollar should be taken into consideration in establishing the value of a property. The articles indicate that we should make allowance for the increasing or decreasing value of the dollar. It is my opinion that all such considerations can be eliminated in real estate appraisal. The values that we arrive at are expressed in terms of *today's* dollars. As Babcock[2] stated in his book, "We quote in terms of today's values, realizing that while prices may be different in the future, the values in terms of today's prices can be used. Changes in the value of money do not alter the valuations."

Since all real estate values are expressed in terms of money, they become prices. Babcock in discussing the purposes of valuation states, "Inquiry into the nature of each of the typical purposes for which valuations are used indicates that warranted price, indicated in this book by the word value, is always called for rather than an estimate of market price." It is well at this time to present several definitions that have been offered for the value contemplated in a real estate appraisal.

Let us start back in 1894 with the definition furnished in the case of C. C. C. and St. Louis vs. Victor M. Backus:

> The value of the property results from the use to which it is put, and varies with the profitableness of that use, present and prospective, actual and anticipated. There is no pecuniary value outside of that which results from such use.

The definition of value as furnished in the Standards of Practice is:

> The market value of a property at a designated date is that competitively established price which represents the present worth at that date of all the rights to future benefits arising from ownership.

It goes on to state that, "Hereinafter the word 'value' means market value as defined."

Peter Hanson[3] uses the term "warranted value" and defines it:

> Warranted value is that sum, estimated in terms of money at a given date, which a person would be justified in paying for the future net benefits accruing from a property.

Our president[4] in his book furnishes the following definition:

> Value is that capital sum, expressed in terms of money, which a purchaser for investment would be justified in paying for a property, an estate, or an interest, at a given date. It is the present worth of all the rights to future benefits arising from the property. This present worth must be computed upon a basis to be comparative and competitive with all other forms of investment then available to the investor.

He states further:

> Lacking any specific instructions to the contrary, all ordinary valuation work seeks to develop and determine the justified market value of the unencumbered fee simple to the average available owner and for that reason the remarks and discussions throughout this volume are directed to that purpose.
>
> Any given property can have but one justified market value, but it can have as many other

2. Frederick M. Babcock, *The Valuation of Real Estate.*

3. Peter Hanson and W. L. Pollard, *Condemnation Procedure.*

4. P. W. Kniskern, *Real Estate Appraisal and Valuation.*

values as there are other purposes or interests for which it may be valued or as there are assumed or existing conditions which may be recognized.

Babcock in his book does not furnish a specific definition for the word value. He devotes considerable space, however, to the discussion of the term. He states in his book:

> For purposes of developing a practical theory of real estate valuation, a distinction will be made in this book between value and market price. Value will be used to designate the concept in which the thoroughly informed buyer is present and market price will be used to designate the prices which properties actually do bring in the real estate market. In other words, it will be assumed that many real estate transactions occur at prices which are over or under the prices which would be paid if all available and pertinent knowledge of the properties were used and influential with buyers and sellers. To those acquainted with the actual real estate market, the force of the distinction will not appear overdrawn.
>
> Both are exchange-value concepts. In many cases, the two values are identical, of course. In making the distinction it is contemplated that "value" is a more accurate and reliable figure on which to base business transactions than is "market price." In general, it is contemplated that the valuators function consists in the determination of "values" and that the difference between "value" and "market price" is of real significance in the real estate activities which involve valuation.

Mark Levy in this Journal stated:

> I believe that the definition might well read as follows: "The value of a property at a designated date is that amount of money which represents the then present worth of all the rights to future benefits arising from ownership."

The definition presented in the Standards of Practice starts with the concept of "market value." Webster's Dictionary defines "market value" as "The price which a man can expect to receive, the average value of a commodity in a given market during a short period of time." Taking the first part, "The price which a man can expect to receive," this might be acceptable if it were explained further. The second section explains it in part—the average value of a commodity in a given market during a short period of time. The difficulty in applying this concept to real estate is that few parcels of real estate are sufficiently alike to develop average prices. In addition, there is no "market" in the sense that the word is here used.

Peter Hanson in this Journal said, "In real estate practice there is no such thing as 'market value' in the strict meaning of the term. The result is that the term 'market value' as it has come to be used and applied to land is not market value, but nothing more or less than selling price." Babcock says in his book, "Value will be used to designate the concept in which the thoroughly informed buyer is present and market price will be used to designate the price which properties do bring in the real estate market."

Since price is value expressed in terms of money, we can assume there is in real estate appraisal the concept of market value. It would be the price that would be obtainable if property were sold—the current price. It would take into consideration probable buyers at the present time and would not necessarily allow a reasonable time to advertise and find a proper buyer. In times of depression this market value or price would be below what we subsequently define as "value." In times of prosperity it might conceivably be in excess of such "value." It might be better in many ways to refer to this concept as "market price" rather than "market value."

It would, therefore, be desirable to eliminate from the definition of value as presented in the Standards the words "market value." The next portion of the definition includes the words, "at a designated date." It is my opinion that this is not necessary to the definition of value. All appraisals are made as of a certain date and the date is an important part of

the appraisal. However, the date is not a part of the definition and can well be eliminated. The next section states, "is that competitively established price." Market value, in the ordinary use of the word, would be the competitively established price. Reverting to the definition of the term in Webster's Dictionary, "The average value of a commodity in a given market during a short period of time," if we use market value in the sense thus defined, there are many types of real estate which do not have "market values." If, however, we use the concept of current price—market price—all properties can be disposed of at some price. Since this concept of price differs from the value we are trying to define, this portion of the definition should also be eliminated.

We now have left, "The present worth of all the rights to future benefits arising from ownership." Hanson in his definition includes the concept of "the future net benefits accruing from a property" but rather than present worth he uses the concept of what a person "would be justified in paying." President Kniskern in his definition given above, includes first this concept of what a person would be justified in paying for a property, and then goes on to say, "It is the present worth of all the rights to future benefits arising from the property," which is the same as that portion of the definition in the Standards that remains after eliminating those portions which were not applicable to the concept we are attempting to define. This also agrees with the definition presented by Mr. Levy, as given above, "The value of a property at a designated date is that amount of money which represents the then present worth of all the rights to future benefits arising from ownership."

It would thus seem that we have a definition that has some acceptance, "The present worth of all the rights to future benefits arising from ownership." In addition, Hanson and Kniskern make use of the words, "The sum a person would be justified in paying." This definition was sent to members of the committee. One member questioned the use of the word "worth" on the basis that it was merely a synonym for "value" and as such did not add much to the definition. I believe his contention was well founded. Accordingly, I have made a slight change and incorporated the concept of "justified" amount. The definition that I would submit is:

> **Unless otherwise specified, the value to be computed in an appraisal of real estate is the sum which the average purchaser is justified in paying for all the future benefits arising from ownership.**

The definition is prefixed by the words, "Unless otherwise specified" since it is my belief that there are certain values to particular people or for particular uses. Kniskern in his book states that "Any given property can have but one justified market value but it can have as many other values as there are other purposes or interests for which it may be valued or as there are assumed or existing conditions which may be recognized." The definition offered is intended to cover the average case. Where a particular value is required, it must be so specified in the appraisal.

"Sum" is defined by Webster as an amount of money or currency. Accordingly, the words "expressed in terms of money" or similar words are not needed. The average purchaser is contemplated in an appraisal unless otherwise specified. Kniskern in his book states, "Value is that which the average and typical buyer normally interested in the particular type of property is justified in paying for a piece of property." If the appraisal is for a particular purchaser who differs from the

average purchaser, the appraisal becomes one of a specific value which must be defined in the appraisal. The average purchaser in the case of office buildings, hotels, etc., may become a corporation rather than an individual but the definition still applies. Kniskern includes the word "typical" but in my opinion "average," as used here, has the same meaning.

The word "justified" includes the concept of the thoroughly informed purchaser as against the willing purchaser who might be willing, as in the case of purchasers of speculative subdivision lots, but who were not thoroughly informed. In fact, the words "the thoroughly informed purchaser would pay" could be substituted for the words, "the average purchaser is justified in paying."

The future benefits arising from ownership may be commercial rentals, business profits, or amenities, or combinations of any or all. The definitions, however, includes all.

A list was made of the values that have been referred to in various articles and books. A grouping was then attempted in order to develop definitions for them. Two terms which have been used quite frequently are justified value and warranted value. Both of these terms are contemplating a comparison with price paid as compared to price which should have been paid. As quoted above, Babcock states, "Value will be used to designate the concept in which the thoroughly informed buyer is present and market price will be used to designate the price which properties actually do bring in the real estate market." He thus uses the word "value" in the sense that we present in the definition given above. He does not use the term "market value" but prefers, as I do, the term "market price." If we make this differentiation, there is no need for the use of the word "justified" or "warranted." Value as defined includes this concept. Price will be used to refer to those situations where the amount is not warranted or justified.

Two other terms which are frequently used are "use value" and "utility value." These terms are used in connection with these properties serving the owners directly, such as private residences, manufacturing buildings, clubs, churches, etc., as compared to those which serve the owners through income received. The use to which these properties can be put represents the future benefits of ownership so that the definition as presented above includes these values. The "use Value," however, to a particular person or for a particular purpose would require definition. It is interesting to note in this connection that the orginal concept of value by the Supreme Court of the United States was this "use value." Gradually, however, a transition occurred from physical things having only "use value" to expected earning power. The definition furnished in the C. C. C. and St. Louis vs. Victor M. Backus case shows this transition:

> The value of the property results from the use to which it is put, and varies with the profitableness of that use, present and prospective, actual and anticipated. There is no pecuniary value outside of that which results from use.

"Going value" is another term which is used. It is tied in with the concept of "going concern." It represents a value for a particular use or a particular individual. It is used frequently in connection with industrial plants where the type of building is special to that type of manufacture. The property has a value to that concern as long as it is in operation. Should the operation cease, the value for the most part disappears. All that remains is the land and the possible use to which the building can be put by others. An appraisal may be requested of the "going value" of a property but the appraisal

must specify that value as "the going value to the present owner" or some equally clear limiting statement.

Particular value or "value to a particular owner" is self explanatory. "Going value" as stated is a form of "particular value." An old homestead may be worth more to a family in which the ownership has continued for several generations. The value to such a family would be more than that covered in the general definition of value given above. There are many instances of value to particular individuals, but amplification is not necessary here.

"Capital value" and "income value" have reference to income-producing properties as distinguished from "use value," in which the value lies in the use to which the property is put. The contemplated productivity of the property through income results in the "income" or "capital value" to the purchaser.

"Improved value" is defined in the Standards of Practice of the Appraisal Division as "the difference between value and cost; the difference between value and net cost at completion; a term applied to construction projects or properties, the improvements of which have been newly completed." The term has been used to describe the added value over the cost, as well as the total value. In its strict sense it should be used only to refer to the added value. Land is purchased and buildings are erected in order that profit may be realized. This profit if realized becomes the "improved value." In many instances, there is no profit and thus no improved value. The income produced by the property does not pay a fair return on the costs. No large amount of improved value can ever continue due to the attraction of capital to similar developments, which will reduce the net return on the proposition, thus reducing or in many cases eliminating the excess of value over actual cost.

"Forced sale value" like market value should rather be stated as a price. It represents the price that is expected under conditions of forced sale. It is not a value in the sense in which we are using the term. Similarly, "salvage value" is the price that is expected for a structure at the expiration of its useful life.

There are many other concepts of value which will require definition. For example, there is the question of "physical value" which contemplates the cost of erecting the equivalent economic unit, not the cost to produce the same physical structure. On the other hand, "replacement value" is used by some to mean the cost of replacing the same structure. Some include only physical depreciation. Others take economic factors into consideration.

There are also specific terms such as "plottage value," "rental value," "assessed value," "condemnation value," "insurable value," "nuisance value," that all represent specific values and must be so defined in an appraisal.

It would take too much time to present definitions for all these terms. In addition, the committee itself, has not completed its studies. It is expected that the definitions will not necessarily agree in all details with the ideas of all Members of the Institute. This would be impossible, since all do not think alike. It is expected, however, that definitions will be developed that will be generally accepted. It will then be the task of the Institute to publicize these definitions so that other groups, such as the courts, will recognize these definitions so that the confusion that now exists may be eliminated.

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Court Decisions

Judicial Review of Appraisals

By ANDREW C. HAMILTON, Member Illinois Bar

APPRAISALS prepared by professional appraisers are frequently brought before courts of law for consideration. From the viewpoint of the professional appraiser, it is interesting to note the attitudes which courts have taken toward questioning the validity of an appraisal or the method by which a valuation was reached.

One of the leading cases in which these questions have been passed upon by a court, is Monidah Trust vs. Arctic Construction Co., et al, 264 Federal Reports, Page 303. The Monidah Trust filed a suit in the Federal District Court to set aside an appraisal of the value of certain land under a lease and asked for a decree of the court to determine the true value of the land. This was an appeal by the Monidah Trust from a decree entered in favor of the defendant, Arctic Construction Co.

The lease was made in 1908. It was a lease of unimproved city property for a term of 50 years. It provided that the rent to be paid by the lessee should be upon a basis of 4 per centum per annum net upon the appraised value of the property. The lease fixed the value for the first 5 years of the lease at $540,000, and for the next five years at $630,000, and provided that the remaining 40 years of the lease should be divided into four periods, of 10 years each, the value of each 10 year period to be determined by appraisement, each party to the lease to appoint an appraiser, and the appraisers so appointed to appoint a third appraiser, all of whom should be disinterested parties, competent to estimate the value of said property. It further provided that the appraisers should examine the property without the improvements and determine the value thereof, and that the decision and approval of the appraisers, or a majority thereof, should be binding and conclusive upon the parties for the next 10-year period, and that it should be the basis on which the 4 per cent. annual rental should be computed. The lease also provided that the lessee at its own expense should construct within a limited time a commercial building on the premises, at least seven stories in height, the building at the end of the lease to revert to the lessor. After the execution of the lease the lessee went into possession and constructed the building, and paid the agreed rental for the first 10 years.

The appraisal in controversy was made for the 10-year period beginning June 1, 1918. The appraisers were Heitman, selected by the Monidah Trust; Nichols, selected by the Arctic Construction Co.; and Folsom, selected by the other two. These three proceeded to take evidence as to the value of the property. They examined sixteen witnesses, most of whom were experts on the value of real estate. The valuation placed on the land by the witnesses varied from $150,000 to $540,000. The figure finally adopted was that of Folsom. He arrived at his result in the following manner: He computed what in his opinion would be the total annual gross income from the improved property, which he found to be $53,700. From this he deducted estimated amounts for taxes, insurance, and, other items of expense, including allowances to the lessee for amortization of the building, management, and interest on the money invested in the

building, and arrived at a net income of $8,685.22 per annum, and this he divided by 4 and multiplied by 100, whereby he arrived at the $217,130 which he assigned as the value of the vacant ground. Both the other arbitrators at first did not agree; Heitman claiming that the value was too low and Nichols that it was too high. Nichols, however, after conferring with the secretary of the appellee, announced his willingness to acquiesce in Folsom's estimate. Heitman refused to assent.

It was contended that the decree should be set aside for the reason that the appraisers, in adopting the computation which Folsom made as the basis for their finding in fact made no attempt to ascertain the exact thing submitted to them for determination, but determined only how much, in view of the earning capacity of the building which was on the land, the lessee could afford to pay for the use of the land.

Nichols took the position that the appraisers had no right to capitalize the building for the benefit of the ground; that their duty was simply and solely to fix the value of the ground and the only thing they could do would be theoretically to raze the building from the ground, and take the then present city ordinances into consideration and build a hypothetical building under the present law, just as if the then present building did not exist. He objected to using the then existing building for the basis of computation, for the reason that under the then existing ordinances of the city it could not have been built upon that land and that capitalizing it was not fair under the circumstances, but he testified:

"I finally acceded to it in order to arrive at an appraisement."

Folsom testified:

"I listened to all that testimony (testimony as to the value of the land without improvements) and for my own satisfaction I undertook to figure out what, in my own mind, the property would show a net return on, if adequately improved and adequately managed. * * * I also took into consideration the testimony of all the witnesses. The result which I reached absolutely represents my judgment as to the true value of the land without improvements."

He again testified:

"What I was undertaking to do in making this computation was to arrive at the value of the ground. * * * I was trying to arrive at what sum of money that ground was worth, if adequately improved, adequately rented, and properly managed."

The court in discussing the computation made by Folsom, said:

"We are not convinced that the computation made by Mr. Folsom was improper to be used to aid in determining the value of the land. It was not the sole basis of the valuation arrived at. It was used in connection with the testimony of witnesses who gave their estimates of the value of the land."

In the same case the court discusses the difference between arbitration and appraisement, as follows:

"The purpose was not to settle an existing controversy but to avoid further dispute by fixing a valuation. Appraisers are not governed by the rules relating to arbitration. 'As long as appraisers act honestly and in good faith, they have a wide discretion as to their methods of procedure and sources of information. Generally speaking, they may inform themselves in any way that an honest seeker for the truth would adopt.' Omaha Water Co. vs. City of Omaha, 162 Fed. 225; Omaha vs. Omaha Water Co. 218 U. S. 180, 48 L. R. A. N. S. 1084."

The court held as follows:

"An award of appraisers is subject to impeachment for fraud, or misconduct

amounting to fraud, or mistake which is not merely a wrong conclusion upon the matters submitted, but it is not to be vacated for mere errors of judgment upon questions of fact or law submitted. 5 C. J. 179; Goddard v. King, 40 Minn. 164, 41 N. W. 659; James V. Schroeder, 61 Mich. 28, 27 N. W. 850; Duvall v. Sulzner (C. C.) 155 Fed. 910; Palmer v. Clark, 106 Mass. 391; Shawhan v. Baker, 167 Mo. App. 25, 150 S. W. 1096; Donaldson v. Buhlman, 134 Wis. 117, 113 N. W. 638, 114 N. W. 431. In Burchell v. Marsh, 17 How. 344, 15 L. Ed. 96, the court held that, if the award is within the submission and contains the honest decision of the arbitrators, after full and fair hearing of the parties, a court of equity will not set it aside for error of law or fact, and the court quoted the language of Lord Thurlow in Knox v. Symmonds, 1 Vesey, 369, who said that in order to induce the court to interfere—'there must be something more than an error of judgment, such as corruption in the arbitrator, or gross mistake, either apparent on the face of the award, or to be made out by evidence.'" The court went on to say:

"Courts should be careful to avoid a wrong use of the word 'mistake' and, by making it synonymous with mere error of judgment, assume to themselves an arbitrary power over awards. The same result would follow if the court should treat the arbitrators as guilty of corrupt partiality merely because their award is not such a one as the chancellor would have given."

Another serious question was raised by the contention that the appraiser Nichols acted as the personal representative of the appellee, and not as a fair, disinterested, and impartial appraiser, and that on joining in the award he acted under the appellee's direction. Reference was made to the fact that, before Folsom was selected as the third appraiser, Nichols consulted with Morris, the appellee's secretary, and that, when Folsom had announced his conclusion, Nichols again consulted Morris, before assenting thereto. The court in its decision said in answer to this contention:

"We are not convinced that these matters are sufficient to avoid the appraisement. It was not improper that, before selecting the third appraiser, Nichols should inquire of the appellee whether it made objection to his acting in that capacity (Silver v. Connecticut River Lumber Co. (C. C.) 40 Fed. 192), and there is nothing necessarily fraudulent in the fact that before agreeing to the appraisal Nichols made known to Morris the conclusion which Folsom had reached. The evidence does not indicate that in agreeing with Folsom Nichols acted under the direction of the appellee. * * * It has been held that one who appoints his agent an appraiser will not be heard to complain that the other appraiser was an agent of the opposing party. Wheeling Gas Co. v. City of Wheeling, 5 W. Va. 448, 496. In Fox v. Hazelton, 10 Pick. (Mass.) 275, Chief Justice Shaw said:

"'And it is not unfrequent in practice for each party to select a friend known to have formed and expressed opinions upon the subject, and preferences for the parties respectively, trusting that these opposite prejudices will balance each other, especially with the aid of an impartial umpire. Without commending the expediency of such references, the court can entertain no doubt of the validity of an award made by such referees, nor could the parties be heard to impeach it on this ground.'

"Where no corrupt motive appears, the fact that one arbitrator talked with one of the parties regarding the case does not require that the award be vacated. 5 C. J. 188; Flatter v. McDermitt, 25 Ind. 326; Morville v. American Tract Ass'n, 123 Mass. 129, 139, 25 Am. Rep. 40; City of Bridgeport v. Risenman, 47 Conn. 34; Adams v. Bushey, 60 N. H. 290; Wood v. Auburn & R. R. Co., 8 N. Y. 160."

The appraisal made pursuant to the terms of the lease was sustained.

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Comment and Discussions

Percentage of Sales Paid For Rent

IN appraising the warranted rental value of store buildings, it is of interest to study figures available from the Census of Retail Distribution, published by the U. S. Department of Commerce. The statistics were collected in 1930 and cover the operations of retailers, during the year 1929, in every state in the United States, and in every city having a population of 30,000 and over. These reports may be secured from the Superintendent of Documents at Washington.

For example, the report covering California gives for the state, as a whole, among other interesting statistics, the total number of stores in each kind of business occupying leased premises, the total rent paid for same, and the percent of rent to sales. Similar data is given covering each kind of business in Los Angeles and in San Francisco.

The percentage of sales paid for rent, in 1929, in Los Angeles, covering the following kinds of business, was reported in said publication to be as follows:

	Per Cent
Art and gift shops	13.07
Automobile accessories, with tires and batteries	4.04
Automobile (Agencies)—new cars and trade-ins	1.69
Automobile dealers in used cars	2.35
Book stores	4.80
Candy stores, with fountain	10.17
Cigar stores without fountains	10.48
Cigar stands	13.96
Clothing (Staple) (Men)	7.18
Clothing (Staple) (Women)	7.50
Department stores	2.31
Drug stores with fountains	6.98
Drug stores without fountains	5.88
Five and ten cent stores, and to-a-dollar	5.14
Florists	9.03
Furriers—fur shops	6.28
Furniture stores	5.07
Grocery stores (without meats)	3.91
Haberdashery (men's furnishings)	11.41
Hardware stores	5.23
Jewelry stores	8.07
Millinery stores	18.25
Music stores (with radio)	6.45
Music stores (without radio)	6.75
Restaurants	9.57
Shoe stores	8.72
Sporting goods	10.22
Tailors	8.71
Trunks and leather goods	17.07
Women's wear (corsets and lingerie)	13.98

"Percentage Lease Rates" was discussed at length and in an interesting and able manner by Mr. K. Lee Hyder, in the April, 1934, issue of the Journal.*

He presents a table on page 208, giving "opinions of fair percentage lease rates," . . . "prepared by selecting representative opinions of eight rental agents or brokers from the published lists during the ten-year period 1923-1933, inclusive." He also enumerates the sources of information on percentage lease rates.

The fact that Mr. Hyder did not mention the Census of Retail Distribution among his sources of information leads me to think that he overlooked this interesting source. Many other appraisers may have done the same, hence this comment.

In checking the above Los Angeles percentages with the percentages covering the same kinds of business in Mr. Hyder's table, it will be noted that about half of them are between the "high" and the "low" figures set forth by Mr. Hyder; of the remainder, half are above the "high" and half are below the "low" figures. Checking the comparable items as a whole in the two tables, the average percentage in the above Los Angeles table for all kinds of business mentioned in the table is 8.14%; in Mr. Hyder's table, averaging

*See page 205, Vol. II, No. 3, The Journal of the American Institute of Real Estate Appraisers.

his "average" figures, 8.44% — not far apart.

LOUIS M. PRATT.

Pasadena, California.
June 28, 1934.

* * *

DEPRECIATION AND OBSOLESCENCE

THE physical deterioration of a building, plus actual obsolescence in design and lack of modern conveniences, constitute what is known as *depreciation.*

The purpose of this article, from the pen of a practical builder, is to analyze each factor of depreciation separately and to arrive at a more convenient and accurate method in determining the rate. There is still much confusion of thought on the subject of depreciation; and a discussion of the subject will, in my opinion, lead to more uniformity in appraisal practice.

Deterioration is the physical wear and tear of the structural parts of the improvements, caused by actual use and by the elements. If well-constructed, such items as foundation, joists, studding, subfloors, rafters, and roofboards will last several hundred years. The same is true of plastering and other items that are not exposed to the elements. Such items therefor have a long physical life and do not deteriorate at the same rate as for instance painting applied to outside walls or the shingles on the roof. Painting of a frame structure must be done every fifth year in order to preserve the property. Even the best grade of cedar shingle must be replaced in 20 years. The life of a hot air furnace is about 15 years. Electrical fixtures, porches, floors, and woodwork have to be replaced while the main part of the building is still structurally sound. The actual deterioration may be determined by finding the age of each item separately:

Example: Age of wood shingle roof, 15 years (will last 20 years).
Cost of relaying $300.00
Deterioration; 75%.....75×300= 225.00
Building painted 1932. Age 2 years (will last 4 years).
Cost of painting.....$150.00
Deterioration; 50%.....50×100= 50.00

This method eliminates guesswork and gives the appraiser more confidence and prestige, especially when testifying in court. Cross-examinations are sometimes very unpleasant for an appraiser if he is not prepared to analyze and support every step in the appraisal.

I have in mind a recent case in the local court. Both parties to the suit had hired appraisers to testify to the value of a certain property. Both appraisers had arrived at the same figures on the reconstruction cost of the improvements and the land value. But the plaintiff's man had used a depreciation rate of 4% per year, thereby arriving at a lower valuation than the defendant. Under cross-examination he had to admit that the rate he had used was more or less a guess. The defendant's appraiser by using the above method was much better prepared to sustain his testimony by being able to justify every step in his appraisal.

The subject of *obsolescense* deserves the most careful study of the appraiser. As a general principle a building is not obsolete if it conforms to or is of a higher class than the improvements in the neighborhood. Different classes of people live in different manner and it would be unfair to set the rate of obsolescense of a modest home in a country village by comparing it with high class homes in the larger cities. If the house is well-constructed, and compares favorably with other improvements in the block or district, it is not obsolete; but if the same building is located in a 100% residential district and surrounded by improvements of modern design and of

higher cost, a deduction for obsolescense must be made.

Very old frame and brick residences do not, as a rule, comply with building codes adopted by progressive cities and villages. Small bedrooms, low ceilings, exposed plumbing and electric wiring, old style fireplaces, fancy grillwork on trim and porches are items of obsolescense. A number of old buildings in cities and villages that have adopted building codes, are, while yet structurally sound, liable to condemnation for sanitary reasons or on account of being fire hazards. In many cases an old building has no value, and both the owner and the district would be better off if it were removed. Theoretically the amount to be deducted from the value of improvements for obsolescense is the amount necessary to modernize the improvement to the extent of conforming to the average improvement in the block and district. If it is found that the cost of modernizing the structure does not warrant the expenditure, the building may be considered obsolete.

The basis of the value of an obsolete building is the sum total of net rent receivable during its remaining economic life. The economic life ceases when the net income from the property is less than the taxes, insurance, and repair bills, and when the land value warrants the expenditure for a higher type of improvement. (In figuring the net rents a proper amount must be credited to the investment in the land).

Deterioration is tangible and can be determined accurately. It is the cost of placing the improvements in same condition as when new.

Obsolescense is intangible and varies with the location and the district. The amount of obsolescense is the cost of modernizing the improvements to comply with the standard in the block, district, and territory in which it is located.

Depreciation is the sum total of these two factors.

The rate of depreciation should be determined by the actual condition of the properties appraised and not by a ready made depreciation table. In fast growing cities the life of residences may be only 25 to 30 years, while buildings in the smaller communities and villages at that age are in their prime. It is well to remember that the amount of loss sustained by owners and investors in modest homes in the smaller cities and villages is far less than that of investors in over-improved buildings in the larger cities. Let the man that can afford it change the style of his home as his wife changes the style of her gown, but let us remember that the majority of homes are built to suit the requirements of the man with a modest income. Let the average standard of living in the district be the determining factor of the rate of depreciation.

OSCAR SODERQUIST, M.A.I.
Waukegan, Illinois.
June 1, 1934.

* * *

APPRAISING FOR LOANS

THE article written by Maurice F. Reidy, M. A. I., in the July, 1934, issue of this Journal, on "An Appraisal That Went Sour" very clearly shows that he understands that which is necessary in appraising real estate. In reading the article I was reminded of a conversation I had a few years ago with the head of one of our largest banks and I thought by relating the conversation it may be helpful, by way of suggestion, to some of the members of the Institute in getting appraisal business.

It was at the end of the year and the banker was commenting to the writer on

the year's progress of the institution, of which he was the head, stating that the bank had had one of the best years in its history and the only "thorn in my side this year was a deal in connection with some of our —— old real estate." I asked for an explanation and after it was given me I explained that it wasn't the real estate that was at fault but the fault was with the bank for financing a real estate transaction without full knowledge of the value and desirability of the project. After my explanation, I suggested that the institution was big enough and handled so many transactions involving real estate that a competent appraiser should be retained in all real estate matters. Then the bank would not have occasion to make a mistake such as was made in the transaction in question.

There were several things that were involved that a competent appraiser would not have approved; first, the type of development; second, the location was bad for most any type of financing; and, third, the amount involved was double what it should have been had the project been desirable. The banker readily agreed, after the explanation, that I was correct and that in the future they would act accordingly.

I made the statement to the banker that I knew it to be a fact that the bank would not lend on, or take real estate for collateral, without having the bank's attorney pass on the title. "This," I said, "is as it should be; however, you will undertake to finance a large real estate project and use your own judgment as to value. Since you are not posted sufficiently on real estate you should be as careful in ascertaining the value and desirability of the real estate you are asked to finance as you are that the title is good."

The article of Mr. Reidy reminded me of another incident of a few years past. One of our mortgage companies was desirous of selling mortgages to leading out-of-the-state insurance companies. While this mortgage company had been in business several years and had the recommendation of the bank it was doing business with, the insurance company agreed to buy mortgages from the company only with the stipulation that it should have the right to designate an individual appraiser. I happened to be the appraiser designated and the head of the mortgage company informed me of the arrangement. He then proceeded to show me several properties on which the mortgage company had loans he wished to sell. After inspection, I rendered my report; whereupon, I was advised by the manager of the mortgage company that he could see readily that they would not be able to sell any mortgages on my appraisal, stating further that he knew the loans in question were not 50% loans, that the insurance company knew that also, and stated further that the insurance companies had so much money to lend that they were willing to make loans up to 75%. Of course, I told him it was immaterial to me how large a percentage the company was willing to lend, but my appraisal would reflect the true value and not a fictitious one. It is needless for me to say that I lost the business. However, I have no regrets, for we all know what has happened to loans that were made on a 75% basis.

There are a number of insurance companies lending funds in this field that previously were not requiring individual appraisals, but have in recent months changed their policy and are now employing them.

HENRY S. MILLER, M.A.I.

Dallas, Texas.

August 8th, 1934.

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The Fifth Congress of International Federation of Surveyors

By MAURICE F. REIDY, M. A. I.

IN London on July 18 for the fifth time the Members of the International Federation of Surveyors met for their Congress. These men came from twenty-one different countries. The larger number were from Great Britain—delegates from that Empire being 196 out of a total of 346.

Each four years the Members of this Federation gather and discuss subjects of interest to Real Estate. The topics discussed generally are "surveying," "town planning," "estate management," "development and valuation of property," and "quantity surveying."

It was the first time, I believe, that this Federation had invited any group in the United States to send a Delegate. I had the honor of being chosen by the American Institute of Real Estate Appraisers to represent them and the National Association of Real Estate Boards.

Meetings were held during the four days beginning Wednesday July 18. The headquarters for the Congress was in the building of the Chartered Surveyors' Institution of Great Britain. This body is of very high professional standing. Qualifications for membership require the equivalent of a four-year special course at Cambridge University or a like course in the College of Estate Management in London, and examinations are rigid and thorough.

The Institution has as its Patron, His Majesty, King George V.

Membership includes: Juniors, Associates, Professional Associates, Colonial Fellows, and Fellows.

Many of its members specialize as Estate Managers, Surveyors, Quantity Surveyors, or Valuators.

The Congress provided for professional papers and discussions on each of these subjects.

I arrived in London four days before the opening and reported at the headquarters of the Chartered Surveyors. Major A. H. Killick, D.S.O., who serves the Institution in the same capacity as our genial Herb Nelson does ours, was very kind in his greeting and asked me if there was anything they could do for me. I asked him if he could arrange for the four days previous to the congress for me to go into the office of some leading appraiser in London to work with them, go over their actual appraisal reports, visit some properties, discuss their methods and compare them with ours. This was arranged and I had the privilege of going in the office of C. Gerald Eve, in Chancery Lane, a distinguished professional valuator who was formerly President of the International Federation and had previously been the Chief Appraiser for the British Government. The few days before the Congress opened turned out to be intensive working days and your Delegate learned a lot about methods of appraising, principles of valuation, costs of different kinds of building, rentals, leases, land values, and housing developments. The gentlemen in the Eve office, headed by Brian Eve, his nephew, were kind indeed and were wonderfully patient and painstaking in their effort to teach the American Delegate something about English methods.

Some idea of the standing of the Eve office may be gained from knowing that this office was recently commissioned by the British Government to appraise all the Public Utilities of London.

Their work is largely devoted to valuating. I had the privilege of checking with them appraisals of apartment houses, residences, factories, and various other work, including even a race track. Their method of appraising does not differ in any great respect from the American method as practiced by members of our Institute. The principles of valuation must, of course, be alike in the two countries. Methods may differ, and human judgment must enter into the value conclusion whether the property valued is in Czechoslovakia, or England, or America. The circumstances attending a property may be different in Great Britain than in our country and undoubtedly are different because they have been dealing with permanence, while we have been, during the whole history of our country, in a transition stage. Our quick growth, especially in our cities, has necessitated the tearing down, after a short life, of many of our buildings to erect larger buildings that would have greater earning power. There, until recently, buildings have been limited in height to seven stories and I believe the legal limit now is fourteen stories. I had luncheon one day during the Congress in a building that was erected about the time of the first white settlement in the United States. While it may have been remodelled and renovated several times during that period of more than 300 years it is a beautiful building today and looks as if it may have a future life of hundreds of years more.

The work of the Valuator in England today is a perplexing and difficult one; in fact, one of the writers said recently, "No young Surveyor could have had a good night's sleep since 1925."

Writing of the present situation in England, J. George Head, in a paper entitled "Valuation

Under Modern Conditions" said: "It is clear to the Valuator that present day prices are unreliable for comparison and yet he can no longer rely upon his old standards. The reason for this is that there has been a changing England during the past almost fifteen years."

The work that has been done there in the matter of building houses is a marvel. England has built over 2,300,000 houses since 1920. At one of the sessions of the Congress, Sir E. Hilton Young, Minister of Health in the British Cabinet, stated that they proposed building another 1,250,000 houses in the coming five years. A rough calculation would show these houses would take care of from 15,000,000 to 17,000,000 people, or somewhere in the vicinity of 40% of the entire English population.

The Government gives a substantial subsidy to every builder, the benefit of which is passed on to a buyer as a house is sold. The great majority rent for from 10 to 15 shillings a week or $10.00, $12.00, and $15.00 a month.

There is a great deal of criticism in Real Estate circles of the quality of these houses. Workmen's houses range in cost from £300 to £500, or from $1,500.00 to $2,500.00. Slum buildings are fast being destroyed.

Another surprising feature is the number of new factory buildings. The Government aids the manufacturer in this way: Since 1930 on application the manufacturer may be relieved of three-quarters of his rates, meaning the taxes on his real estate. There are certain exceptions to this rule, such as monopolies.

One of the perplexing things for the appraiser there has been the multiple Acts which he must take into consideration. Town Planning is compulsory in towns having a population of over 20,000 people. Then there are Land Restricting Acts, Housing Acts, Finance Acts. These have brought about heavy taxation so that large estates have declined in value and are a drug on the market.

Inheritance taxes are very severe. One estate reported in the London Times, while I was there, having a value of about $10,000,000.00, had to pay an inheritance tax of $5,600,000.00 to the Government.

In the ordinary assessment valuation on property in England the rates are based on the fair rental value of the property and rate valuations are assessed every five years although relief can be sought by petition during this period. The Government has favored the farmer as well as the manufacturer since 1930 by giving three-quarter release of his regular rates on farms and buildings but not on homesteads.

The business of the Valuator or Appraiser in England has been splendid for the past several years. The development of new houses, practically new townships in some cases, the building of new highways, all have given rise to a great number of condemnation cases, most of which are heard by official arbitrators when the owner and the Government cannot agree.

In comparing land values in the city of London with our large cities it is interesting to note that Regent Street, which is probably the land of highest value, is considered to be worth somewhere around $400.00 per square foot. In appraising the rental value of stores their method is somewhat different from ours. Largely their practise is not to appraise by front foot values or square foot values, but by squares. A square is a space 10 ft. by 10 ft. A store 80 ft. deep would be divided into three sections; the first area having a depth of 15 ft. having one value; the second area 25 ft. having another; and the remainder a third value.

Perhaps as years go on the examinations for membership in our Institute will approach the high professional standards that they exact to become a Surveyor. The profession of Surveyor is defined by the Royal Charter granted to The Institution in 1881 as "the art of determining the value of all descriptions of landed and house property, and of the various interests therein; the practice of managing and developing estates; and the science of admeasuring and delineating the physical features of the earth and measuring and estimating artificers' work." The last article in their Code of Conduct reads: "No member shall conduct himself in such a manner as to prejudice his professional status or the reputation of the Institution."

I must say this: that our hosts, the members of the Chartered Surveyors' Institution from the President, Allen Arnold, down, and especially Major Killick, were courteous and kind and helpful to the American Delegate, and I hope our contact will be a continuing one. It was a delightful privilege to be the first representative of our Real Estate men and the experience was one that I could well wish that many of our Members could have.

Aside from the educational features, and the pleasure of coming in contact with membership of such a high character, the social features of the Congress were something to be remembered. There was a gracious greeting from His Majesty, King George V, and from the Premier, Mr. Baldwin. There was a reception at Lancaster House, St. James Palace, formal and delightful. One evening was spent on the invitation of the Lord Mayor of London and his associates in the London Government at Guildhall; it was attended by Prince George, the youngest son of the King; supper was served and a dance followed. Another reception and tea at Hampton Court Palace and several tours were planned especially for the Members of the Congress.

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Digest of the Minutes

Meeting of Governing Council, American Institute of Real Estate Appraisers

The Governing Council convened at 9:30 A. M., June 26, 1934, at the Nicollet Hotel, Minneapolis, Minn., the following members being present:

Philip W. Kniskern, New York City, Chairman.
Harry E. Gilbert, Baltimore, Md.
Samuel C. Kane, Philadelphia, Pa.
Norman L. Newhall, Minneapolis, Minn.
E. L. Ostendorf, Cleveland, Ohio.
Frank H. Taylor, East Orange, N. J.
Cyril R. DeMara, Hamilton, Ont., Can.
Cuthbert E. Reeves, Buffalo, N. Y.
Maurice F. Reidy, Worcester, Mass.
Ralph D. Baker, Camden, N. J.
J. W. Cree, Jr., Pittsburgh, Pa.
Joseph B. Hall, Cincinnati, Ohio.
Joseph W. Hannauer, St. Louis, Mo.

Upon motion made by Mr. Ostendorf, seconded by Mr. Kane, and unanimously carried, the reading of the Minutes of the meeting held on April 20, 1934, was waived.

Membership Report

The following membership report was submitted and approved:

1. Number of Members, June 1, 1934..... 280
2. Number of Affiliates, June 1, 1934..... 190

470

3. Delinquents:

Upon motion duly made, seconded, and unanimously passed, four Members were suspended for non-payment of dues, but with the proviso that the suspension would not be effective if payment is made on or before July 20.

The same action was taken with respect to twelve delinquent Affiliates.

4. Reinstatements:

The following Members whose resignations were accepted at the April 20, 1934, meeting of the Governing Council have applied for reinstatement:

Chas. A. Van Winkle, 1 and 2 Station Sq., Rutherford, N. J.

Theodore Van Winkle, 1 and 2 Station Sq., Rutherford, N. J.

Upon motion duly made, seconded, and unanimously carried, the application for re-instatement for these two Members was referred back to the New Jersey Chapter for approval, in event of which they will be reinstated in the Institute.

Five Affiliate Members who were reported delinquent at the January 17, 1934, meeting of the Governing Council and who have since paid dues to the end of 1934, were reinstated by unanimous vote.

Financial Report—By Mark Levy, Treasurer

The following financial report was read, and upon motion made by Mr. Ostendorf, seconded by Mr. Kane, was unanimously approved:

Receipts to June 1, 1934	Actual	Budgeted
1. Bank balance as of 1/1/34.	$ 860.05	
2. 1934 membership dues.....	4,012.62	$4,166.67
3. 1933 dues paid in 1934.....	21.25	
4. Funds on deposit.....	860.00	
5. Examination fees	295.00	208.33
6. Journal account	2,747.85	1,041.67
7. Receipts from sale of standard forms	6.40	
8. Receipts from sale of emblems	3.00	
9. Appraisal Dinner Conference	966.00	
Totals.....	$9,772.17	$5,416.67
Expenses to June 1, 1934		
1. Refund of dues.....	$ 25.00	
2. Administration (including bank tax, exchange on checks, general miscellaneous expense)	97.82	
3. Examination fees	138.93	$ 166.67
4. Journal account	1,897.16	1,250.00
5. Postage	34.96	
6. Printing and stationery....	166.95	3,295.85
7. Salaries and rent.....	1,165.15	1,062.50
8. Funds on deposit.....	280.00	
9. Appraisal Dinner Conference	897.13	
Totals.....	$4,685.10	$5,775.02
Actual bank balance 6/1/34.....		$5,087.07
Funds on deposit 6/1/34.....		580.00
Available cash 6/1/34.....		$4,507.07
Receipts to June 15, 1934, from June 1, 1934		
1. Dues	$ 75.00	
2. Sale of emblems and standard forms	8.00	
3. Examination fees	45.00	
4. Journal—sale of subscriptions and single copies...	380.05	
5. Funds on deposit.....	120.00	
Total.....	$ 628.05	

Bills paid on June 10, 1934

1. Chicago Mailing Tube Co.—tubes for mailing certificates	$ 5.60	
2. Harris Studio—hand lettering on membership certificates	2.16	
3. Adcraft Mfg. Co.—engraving of pins	3.16	
4. Photopress, Inc.—Journal circular	77.00	
5. Printing Products Corp.—Journal article reprint	19.38	
6. Shattock & McKay—reprint of forms	39.75	
7. Walter Russow—refund of cash advanced in mailing Journals	1.10	
Total	$ 148.15	
Actual bank balance 6/15/34		$5,566.97
Funds on deposit 6/15/34		700.00
Available cash 6/15/34		$4,866.97

Outstanding bills to be paid:

1. Adcraft Mfg. Co.—engraving of pins	$ 2.38
2. Claflin-Hill Prtg. Co.—examination paper	10.85
3. Institute's pro-rata share of Division rent for June	
4. Institute's pro-rata share of Salaries	

Upon motion made by Mr. Reeves, seconded by Mr. Cree, and unanimously carried, the President was directed to appoint a Finance Committee consisting of three, to be responsible for the general finances of the Institute as well as of the Journal.

Financial Report of the Journal

The following financial report of the Journal, upon motion by Mr. Ostendorf, seconded by Mr. Reeves, was unanimously approved, with the recommendation that the Committee in charge of the Journal be commended for the work which they have done:

1. Subscriptions as of June 1, 1934:

A. Member subscribers	280
B. Affiliate subscribers	190
C. Non-member subscribers	245
	715

2. Costs in 1934:	Actual	Budgeted
1. Copyrighting	$ 4.00	
2. Postage in mailing	63.43	
3. Advertising—Savings and Loan Journal	88.20	
4. Printing of January Journal	908.25	
5. Multigraphed letters advertising Journal	7.00	
6. Postage and addressing circulars to H.O.L.C. appraisers and prospect list	142.61	
7. Wrappers	13.75	
8. Refunds and N.S.F.'s (including refunds on professional card inserts)	196.25	
9. Printing	15.00	
10. Printing of April Journal	458.17	
Totals	$1,897.16	$1,250.00

3. Income from sale of subscriptions and single copies 6/1/34	$2,747.85
4. Bills paid in June:	
1. Photopress, Inc.—Journal circulars	$ 77.00
2. Printing Products Corp.—reprint	19.38
3. W. Russow—refund of cash advanced in mailing Journals	1.10
Total	$ 97.48
5. Income from sale of subscriptions and single copies from June 1, 1934, to June 15, 1934	380.05
Balance in Journal account June 15, 1934	$ 133.21

6. Report on Journal circular containing table of contents of April, 1934, issue and also of all previous issues available—mailed to H. O. L. C. appraisers and to members of Appraisal Committees of Local Real Estate Boards:

June 15, 1934	Receipts	Expenses
Sale of subscriptions and single copies directly traceable to the circular	$ 356.25	
Printing of circular		$ 77.00
Postage in mailing		106.42
Charge for addressing lists		32.50
Express charge in shipping circulars to Washington to be addressed to H. O. L. C. men		3.69
	$ 356.25	$ 219.61

Number of back issues of Journals still available:

January, 1933—Volume 1, No. 2	348
April, 1933—Volume 1, No. 3	268
July, 1933—Volume 1, No. 4	140
October, 1933—Volume 2, No. 1	720
January, 1934—Volume 2, No. 2	549
April, 1934—Volume 2, No. 3	144

Report of Admissions Committee, by S. C. Kane, Chairman

The Admissions Committee of the Institute met in the Nicollet Hotel in Minneapolis on the evening of Monday, June 25, 1934. The Committee reported that—

Sixty-five (65) applicants were considered and were disposed of as follows:

1. The following candidates were unanimously recommended for election to the Member Grade:

Wm. E. Mosby, 8032 Cottage Grove Ave., Chicago, Ill.

Edward G. Hacker, 228 S. Capitol Ave., Lansing, Mich.

E. F. Pierson, 919 Walnut St., Kansas City, Mo.

Albert W. Lockyer, Depot Plaza, White Plains, N. Y.

Fred E. Smith, 608 Broad Blvd., Cuyahoga Falls, Ohio.

Leonard Downie, 1500 Northern Life Tower, Seattle, Wash.

George I. Noyes, 1411 4th Ave. Bldg., Seattle, Wash.

J. O. Manning, Jackson, Miss.

Upon motion made by Mr. Hannauer, seconded by Mr. Newhall, the above candidates were elected to the Member Grade.

2. It was recommended that action on the application of five of the candidates (whose names were stated) be deferred for further examination.

3. It was recommended that action on the application of fourteen of the candidates (whose names were stated) be deferred for further investigation.

4. The Names of 36 candidates whose applications had been received, but upon which no action could be taken because of their files being incomplete at the present time, were reported.

5. The following candidates have requested that their applications be withdrawn:

Albert F. Hammann, 1604 W. Chicago Ave., Chicago, Ill.

Bernerd F. Cooney, 1115 Main St., Bridgeport, Conn.

Upon motion duly made, seconded, and unanimously carried, the recommendations of the Admissions Committee were approved.

Report of Education and Research Committee

Report of this committee was submitted by Mr. Hall, in which he outlined the following activities of the Committee for the balance of the year. The report was accepted for filing.

1. Preparation of definitions.
2. Revision of appraisal course.
3. Selections of readings on appraisals.
4. Revision of data sheets.

Report of the Membership Committee

No report was read from the Membership Committee.

Report of the Disciplinary Committee

The Disciplinary Committee reported that no matters had been referred to them. Mr. Reeves submitted a letter in which the affiliation with the American Institute was printed on the letterhead, although the individual was only an Affiliate Member. Upon motion by Mr. Ostendorf, seconded by Mr. Baker, and unanimously carried, this letter was referred to the Executive Secretary, with the request that he bring to the attention of the individual in question the section of the by-laws prohibiting Affiliates from stating in any printed matter their affiliation with the Institute.

Report of the Ethics Committee

No report was submitted by the Ethics Committee.

Report of the Committee on Local Chapters

Mr. Reeves reported that he had been appointed only recently as chairman of the Committee on Local Chapters and accordingly had no report to make.

Report of the Legislation and Legal Committee

No report was received from the Legislation and Legal Committee.

Report of Committee on By-Laws

Mr. Kniskern reported that there were 790 divisional memberships in the National Association, of which 470 consisted of Institute members. He reported that there are at the present time 7,000 men engaged in appraisal work for the Government, and that out of this group approximately 1,500 would qualify as Class A men, according to his rating, which would be lower than the qualifications for Member Grade in the Institute. He recommended that consideration be given at this time to the establishment of an Associate Grade, which would be open to Government appraisers, insurance appraisers, and others who are not eligible at the present time for membership in the Institute. After considerable discussion, this matter was referred to the By-Laws Committee to submit a revision of the By-Laws.

The suggested changes in the By-Laws were submitted by Mr. Ostendorf. After considerable discussion, revisions were made and were submitted to the Governing Council for vote. The vote was unanimously in the affirmative.

New Business

Mr. Ostendorf submitted a letter from the Secretary of the Ohio Chapter, which suggested the possible use of the Institute emblem, similar to

notarial seals, by Members of the Institute. This matter was referred to Mr. Baker.

The question was also raised by the Ohio Chapter concerning the establishment of a life membership in the Institute. Upon motion made by Mr. Kane, and seconded by Mr. Hall, it was unanimously decided that such membership should not be established.

The question was also raised by the Ohio Chapter concerning the development of a uniform certificate of appraisal. This matter was referred to the Committee on Education and Research.

The question was raised by one of the members concerning the development of endowments for research and publication. This matter was referred to the Finance Committee.

Report of the Nominating Committee

The Nominating Committee, consisting of E. L. Ostendorf, Samuel C. Kane and Cuthbert E. Reeves, presented the names of Joseph B. Hall for President and Harry E. Gilbert for Vice-President. The Secretary and Treasurer are automatically the Secretary and Treasurer of the National Association of Real Estate Boards.

Upon motion duly made, seconded and passed, it was moved that the nominations be closed. The secretary was then instructed to cast a unanimous ballot for the above names.

The International Congress

Upon motion by E. L. Ostendorf, seconded by Samuel C. Kane, and duly passed, a contribution of $325.00 was authorized to Maurice F. Reidy toward the expenses of a trip to the Fifth International Congress of Surveyors in London, July 15th to 18th, 1934.

There being no further business to come before the Council, the meeting was adjourned at 1:30 P. M.

DIGEST OF THE MINUTES

American Institute of Real Estate Appraisers

The meeting was called to order at 2:00 P. M. in the Ballroom, Nicollet Hotel, Minneapolis, Minn., June 26, 1934, by President Philip W. Kniskern, who presided.

The following names were presented in nomination for election to the Governing Council:

Joseph B. Hall, Cincinnati, Ohio.
A. C. Houghton, Washington, D. C.
W. H. Ballard, Boston, Mass.
Hill Ferguson, Birmingham, Ala.
Arthur S. Kirk, Des Moines, Iowa.
Ralph D. Baker, Camden, N. J.

The following addresses were presented:

1. Opening Remarks by President Kniskern.
2. New Economic Forces That Affect Real Estate Values. George L. Schmutz, M. A. I., Los Angeles, Calif.
3. Causes of Confusion in Current Appraisal Thought. Joseph B. Hall, M. A. I., Cincinnati, Ohio.

The meeting adjourned at 4:20 P. M.

DIGEST OF THE MINUTES

American Institute of Real Estate Appraisers

The meeting was called to order at 9:30 A. M. in the Ballroom, Nicollet Hotel, Minneapolis, Minn., June 27, 1934, by President Philip W. Kniskern, who presided.

Mr. Hannauer moved that the following names presented in nomination be elected to the Governing Council:

Joseph B. Hall, Cincinnati, Ohio.
A. C. Houghton, Washington, D. C.
W. H. Ballard, Boston, Mass.
Hill Ferguson, Birmingham, Ala.
Arthur S. Kirk, Des Moines, Iowa.
Ralph D. Baker, Camden, N. J.

The motion was duly seconded, and was carried by unanimous vote.

The following addresses were presented:

1. An Analysis of An Appraisal That Went "Sour." Maurice F. Reidy, M. A. I., Worcester, Mass.
2. The Appraisal of Farm Lands. D. Howard Doane, St. Louis, Mo.

The meeting adjourned at 11:45 A. M.

DIGEST OF THE MINUTES

American Institute of Real Estate Appraisers

The meeting was called to order at 2:00 P. M. in the Ballroom, Nicollet Hotel, Minneapolis, Minn., June 27, 1934, by President Philip W. Kniskern, who presided.

The following address was delivered:

1. A Lantern-Slide Presentation of An Actual Appraisal. Joseph Larongo, M.A.I., Cleveland, Ohio.

No motions, resolutions, or other business came before the meeting.

The meeting adjourned at 3:30 P. M.

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Current Articles

The full names of the magazines indicated by initials on these pages are given below:

J. L. E.	Journal of Land and Public Utility Economics	Quarterly
N. R. E. J.	National Real Estate Journal	Monthly
R. E.	Real Estate	Weekly
R. & B. G.	Real Estate Record and Builders Guide	Weekly
S. M.	Skyscraper Management	Monthly

Copies of the magazines in which these articles appear may be secured from the Library of the National Association of Real Estate Boards, 59 E. Van Buren St., Chicago, Ill. The price listed includes the price of the magazine and a small service charge for mailing and postage. Subscriptions may also be placed with the National Association.

Actual Appraisal Reports. A. P. Allingham. N. R. E. J. August, 1934, p. 25. $0.70. Valuation of an easement between a mercantile building and an adjacent office building.

Adjusting and Appraising Commercial Leases. I. A. Thorson. N. R. E. J. August, 1934, p. 29. $0.70. A member of the American Institute of Real Estate Appraisers tackles a difficult subject.

Apartment House Maintenance. E. E. Burkhard and F. G. Boulon. N. R. E. J. June, 1934, p. 39. $1.20. Radio aerials, roofing, sidewalks, yards and tiling.

Apartment House Maintenance. E. E. Burkhard and F. G. Boulon. N. R. E. J. August, 1934, p. 36. $0.70. Ventilation, water proofing, water systems, weatherstripping, etc.

Application of Relative Factor Ratings in Land Valuation. Oscar Fisher. R. & B. G. July 28, 1934, p. 6. $0.70. Preliminary findings of studies in various sections of Manhattan.

Building Cost Index Numbers. E. H. Boeckh & Associates, Inc. N. R. E. J. June, 1934, p. 37. $1.20. Figures cover residences, apartments, hotels, office buildings, commercial and factory buildings.

Carrying Costs Affect Profits. Walter Kuehnle. R. E. August 25, 1934, p. 7. $0.30. Mr. Kuehnle, M. A. I., is chief of the real estate division of the Cook County, Ill. Assessor's office.

Construction Costs. E. H. Boeckh. N. R. E. J. July, 1934, p. 47. $1.20. Figures for residences, apartments, hotels, office buildings, commercial and factory buildings.

Depreciation Rules Changed. A. R. Baar. July 14, 1934, p. 5. $0.30. The new revenue act includes vital changes in regard to depreciation on large buildings.

Down With Construction Costs. Homer Hoyt. R. E. July 7, 1934, p. 7. $0.30. Dr. Hoyt says costs must come down or we must have government subsidy and its evils.

Effect of Population Trends on Real Estate Values. W. S. Thompson, N. R. E. J. July, 1934, p. 37. $1.20. Prof. Thompson is Director, Scripps Foundation for Research in Population Problems, Miami University, Oxford, Ohio.

Erosion and Land Utilization in the Driftless Area of Wisconsin. M. H. Cohee. J. L. E. August, 1934, p. 243. $1.45. Appraisers of farm lands will find this interesting.

Farm Land Values Show First Increase in 14 Years. U. S. Bureau of Agricultural Economics. N. R. E. J. July, 1934, p. 30. $1.20. Average value for the U. S. 76% of pre-war as of March 1, 1934, compared with 73% on March 1, 1933.

Land Prices in a Commodity Price System. P. H. Cornick. J. L. E. August, 1934, p. 217. $1.45. Mr. Cornick is a member of the Research Staff, Institute of Public Administration, Columbia University.

The Los Angeles Plan for Determining Office Rental Values. Ross Grant. S. M. June, 1934, p. 15. $0.45. The Los Angeles plan is based on competitive values rather than financial requirements.

May Survey Shows 27.37% average office vacancy. G. W. Klein and L. V. Varty. S. M. June, 1934, p. 12. $0.45. For the first time in more than four years a decline in office building vacancy is shown.

Operating Costs of Apartments. J. E. Muir. N. R. E. J. June, 1934, p. 24. $1.20. Variations in expenses per square foot for different size buildings in New York City.

Past Trends and Migrations of Population in New York. W. A. Anderson. R. & B. G. August 4, 1934, p. 8. $0.70. Analysis covers period from 1900 to 1930.

Probable Effects of Changes in Population Growth. Robert Whitten. R. & B. G. August 25, 1934, p. 4. Mr. Whitten is Consultant, New York State Planning Board.

Real Estate Data: Its Filing and Use by the Appraiser. A. N. Gitterman. R. & B. G. July 7, 1934, p. 8. $0.70. An address before the American Institute of Real Estate Appraisers at Minneapolis, June 27, 1934.

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Book Reviews

Reeves, Cuthbert E. APPRAISING RESIDENTIAL PROPERTY. Buffalo, N. Y. 99 p. $2.00.

This little volume, published in pamphlet form, covers with commendable brevity and clearness about all of the factors which enter into the careful appraisal of residential properties.

It contains a very useful set of tables for the computation of lot values based upon varying unit depths, as well as a clear exposition of certain methods to be used in the appraisal of corner lots and those of irregular shape.

In the appraisal of houses, the author makes a strong case for the use of the square foot as opposed to the cubic foot system, and adopts the former as the basis for a very elaborate set of tables, setting forth the unit values to be used in the computation of reproduction costs.

Houses are grouped as singles, two-family, upper and lower, two-family, side by side, and multi-family, Siamese, side by side, then divided into five classes ranging from cheap to high grade, and into six types by nature of exterior walls. There is included an itemized list of specifications characteristic of each of the respective classes of construction so that the house may be put in its proper class with comparative ease. There is a separate unit cost table for each type of each class of each group of houses, which table covers one, one and one-half, and two story construction, with and without basement. The table also fixes units for eighteen different sets of dimensions carefully graduated so that one or another of them will be closely applicable to the house in question. This feature is in pursuance of the author's text, viz., "Most appraisers fail to appreciate the great divergence in the cost of buildings, similar in specifications, caused by variations in size and shape, and the effect that these factors have upon the unit price of apparently similar dwellings."

The factors are obtained by averaging the building costs in a number of different cities and for use in any specific locality they should be checked with actual prevailing costs and a percentage of increase or decrease established.

From the foregoing brief analysis, it should be evident that the author has given a world of painstaking care to the preparation of this little manual and that it should prove invaluable to the appraiser who desires to arrive at the most accurate results. It may be an open question whether the time and effort involved in procuring all of the supporting data, and setting forth all of the details called for by the appraisal form appended to this book, will be warranted by the compensation which many loaning institutions regard as adequate for the services of their appraisers. A perusal of this little volume by the executives of such an institution might well lead them to realize what a multiplicity of considerations should be comprised in a thorough going appraisal, and to fix the compensation on a fair basis.

Max J. Rudolph, M. A. I.

Cleveland, Ohio, July 26, 1934.

Stewart, C. L. FARM REAL-ESTATE VALUATIONS IN ILLINOIS. Urbana, Ill. University of Illinois. Agricultural Experiment Station, 1934. 73p. No charge.

This small pamphlet of 73 pages is an analysis of 1930 Census data and supplementary information for previous and subsequent dates. For the first time in 1930 the Bureau of Census published farm real estate valuations by minor civil divisions. This bulletin gives special prominence to these divisions in Illinois and includes township averages for the value of farm dwellings, other buildings and the land itself. These averages are especially valuable in that it is now possible to make accurate comparisons with other localities.

The study is not limited to valuation data only. The third chapter deals with the extent to which farm-realty valuation trends have corresponded with rental trends and much valuable farm rental information is found in the heart of the bulletin.

There are five chapters in the pamphlet in addition to a short summary. These chapters are as follows:

Census Valuations for 1930 Compared with Earlier Valuations.

Significant Trends in Illinois Farm-Realty Valuations, 1930 to 1933.

Extent to Which Farm-Realty Valuation Trends in 1926-1933 Have Corresponded With Rental Trends.

Differences in Farm Real-Estate Valuations in Different Districts of Illinois in 1930.

Valuations of Farm Realty in Minor Civil Divisions.

Detailed maps and tables are included.

The publication will be of interest only to those appraisers concerned with farm property. As a general reference book giving average figures it will be of considerable assistance.

C. M. Jones.

Chicago, Illinois, August 28, 1934.

Pollock, W. W. and Scholz, K. W. H. THE SCIENCE AND PRACTICE OF URBAN LAND VALUATION. Philadelphia: The Manufacturers' Appraisal Company, 1926. 315 p. $5.00.

This book written by Walter William Pollock in collaboration with Karl W. H. Scholz, is an attempt to bring the practice of land valuation into the economic and scientific fields. While your reviewer does not agree with many of the features which the Messrs. Pollock and Scholz have fostered, nevertheless, the book makes an interesting study, and much of the information is of value to an appraiser. The Somers system and principles of land valuation, including the Somers curve of value, zone and overlap tables, and corner tables, are thoroughly discussed and handled. It is only a matter of opinion as to whether the Somers Rule is any better to use than many of the other depth rules, such as "The Davies Rule, The Newark Rule, The Chicago Rule, The Milwaukee Rule, The Lindsay Bernard Rule, and the Harper-Edgar Rule" (the last being the one used

in London, England). The zone and overlap tables can be used successfully as well as the corner tables. However, one must be careful in using all of these, that the value found by application of these many rules does not pyramid to and beyond the real, true, or actual value of the property in question.

The writer coincides with the facts in the discussion of land value in the first chapter, with the exception of the air right question. Here a decided differentiation of opinion comes up. There is a horizontal division of value, sub-surface, surface, and overhead, the discussion and elucidation of which would take chapters. Overhead meaning air rights. Air rights are an integral part of land value and have to be considered. The following are instances where the value of air rights are prominent: The lease of rights in Grand Central Terminal, New York City; the Lease of the air rights to Cleveland Athletic Club, Cleveland, Ohio; and the rights in the Philadelphia and Reading Terminal, in Philadelphia, Pa. There are many others throughout the country.

Another point that is questionable is, the securing of base units through local opinion of value instead of appraisers judgment. Every owner, buyer, seller or speculator has two values in his mind; (1) that which he can sell for (high); (2) that which he can purchase for (low). In a public discussion for taxation purposes he will keep the value as low as possible, whereas if he were discussing a tentative lease, sale, or exchange, the value would be much higher. This writer believes that instead of local opinion being the predominant factor in guiding an appraiser or assessor, he should rely on expert judgment formed after a study of sales, leases, capitalized rentals, mortgages, and etc., because they represent an expression of value settled on by parties who have backed their judgment financially. Local opinion thereafter could be then properly considered.

Regarding the mechanical aspects of appraising urban land, it must be constantly kept in mind that the use of exact mathematical mechanics in arriving at a valuation must be tempered by sound judgment on the part of the appraiser.

Part II, Chapters IX to XXIII, is an intelligent, well-written and interesting description of the Somers System, its application and use. Should an appraiser desire to know the exact mechanics of evaluating by means of an approved system, (approved by various municipalities), he should study this. It is also possible to substitute other depth curves for the Somers, if other tables are used in place of the Somers, and still be able to use the mechanics as outlined therein.

The last part, Part III, considers the social and economic significance of scientific land valuation. This part is applicable anywhere in the built-up sections of the country, and is worth while reading, by any appraiser or assessor who is seeking new ideas or a check-up on old ones. The importance of equitable real estate valuation is a known factor today; it was passed over with scarcely a thought a few years ago. The people are valuation-minded when it comes to taxation, and a real need for re-assessment throughout the country exists. It is agreed with the authors that legislative procedure for establishing equitable and uniform assessment methods and further research in urban land economics should be fostered. It would be a big step towards an equitable tax burden on all real property, and remove one of the many objections to consolidation of taxing districts.

In conclusion it can be said that this book is food for thought to any appraiser, assessor, Realtor, or any one interested in a scientific method of land valuation.

The old adage of the appraiser however must work hand in hand with any mechanical method for determining land values, and that is judgment, which is the factor that shows whether the value found is a true value or one that is only a mathematical computation.

Percy A. Gaddis, M. A. I.

Jersey City, N. J., August 15, 1934.

♣ ♣ ♣

New Members

At the Regular Quarterly Meeting of the Governing Council, held in Minneapolis, Minnesota, on June 26, 1934, the following were elected to the grade of Member in the American Institute of Real Estate Appraisers:

WILLIAM E. MOSBY, CHICAGO, ILL. Born in Bardwell, Kentucky; Active Member, Chicago Real Estate Board; President, Wm. E. Mosby & Co., Inc.; President, Inland Construction Co.; Chief District Appraiser, Home Owners' Loan Corporation; has built for sale and on contract about 100 buildings ranging from modest bungalows to 36 apartment buildings; Lecturer and Teacher; 12 years experience in the appraising of real property; Bachelor degree in Civil Engineering, University of Kentucky, 1910; post graduate courses at Northwestern University; completed courses in real estate appraising, real estate law, land economics and related subjects at the Central Y. M. C. A. School of Commerce; Sponsored by Mark Levy, M. A. I., and endorsed by J. Soule Warterfield, M. A. I., and Geo. R. Quin, M. A. I.

WILLIAM W. MOLLAN, JOLIET, ILL. Born in Joliet, Ill.; Active Member, Joliet Real Estate Board; Member, Mollan Realty Co., Joliet, Illinois; Secretary and Treasurer, Joliet Real Estate Board; 7 years experience in the appraising of real estate including the valuation of business, apartment, residential, acreage, and other types of real estate; Graduate in the National Association of Real Estate Board's course in real estate appraising; 8 years statistical experience with the E. J. & E. Railway Company, and A. S. & W. Company of Joliet; 10 years experience in the general real estate brokerage field including the estimation and supervision of construction work.

EDWARD G. HACKER, LANSING, MICHIGAN. Born in Rochester, Michigan; Active Member and Past President, Lansing Real Estate Board; professional territory covers Lansing, East Lansing, and Ingham County; President, Edward G. Hacker Co., Hacker-Lambertson Insurance Agency; Secretary, Hacker Holding Company, Board of Lansing Ice and Fuel Company, Board of Lansing Chamber of Commerce; Teacher; 10 years experience as Builder; Appraiser for Prudential Life Insurance Company for the past 8 years; has served on the Lansing Real Estate Board Appraisal Committee for a number of years and is Chairman of the Committee at present; Past President, Michigan Real Estate Association; Director, National Association of Real Estate Boards; active in the real estate business for 15 years, and in the appraising of real estate for 12 years; Sponsored by J. G. Lloyd Alexander, M. A. I., and endorsed by Charles H. Warden, M. A. I., and Paul A. Kern, M. A. I.

J. O. MANNING, JACKSON, MISS. Born in Crystal Springs, Miss., in September, 1897; Manager, Manning Home Building Company; Appraiser for H. O. L. C.; professional territory covers the State of Mississippi; Home Builder Member, Jackson Real Estate Board; 6 years active experience in the appraising of real estate including principally vacant and residential properties.

ELMER F. PIERSON, KANSAS CITY, MO. Born in Kansas City, Mo.; Active Member, and Director, Real Estate Board of Kansas City; Appraiser, Swedish-American Savings & Loan Association; Director, Swedish-American Savings & Loan Association; Director, Pierson Grocery Stores, Inc.; Graduate, Kansas City School of Law, L.L. B. degree; appraised all loans for the Leeds Building and Loan Association, Homestead Building and Loan Association, Guardian Savings and Building Loan Association; Central States Building and Loan Association; more than 10 years experience in the appraising of real estate including the valuation of residential and commercial properties.

SAMUEL EDMUND McRICKARD, THE BRONX, N. Y. C. Born in New York City; Individual Member of the National Association of Real Estate Boards; Past President, Real Estate Board of The Bronx; Member, Appraisal Committee, Real Estate Board of the Bronx; professional territory covers the New York Metropolitan area; Advisory Real Estate Expert, L. I. R. R. Co., & P. R. R.; Real Estate Appraiser for the Attorney General, State of New York, Lehigh Valley Railroad Co., Central Railroad of New Jersey, Lehigh and New England Railroad, Westchester County Park Commission; formerly Real Estate Appraiser for the Public Service Com., N. Y., and the Interstate Commerce Commission of the U. S.; more than 25 years active experience in the appraising of real estate; Sponsored by Bracton Goldstone, M. A. I., and endorsed by James F. Matthews, M. A. I., and Wm. F. MacDermott, M. A. I.

JOHN R. HOYT, NEW YORK CITY, N. Y. Born in New York City, N. Y.; professional territory covers New York State and the Southern States; managing property for the Bowery Savings Bank, Manhattan Savings Institution, and Individuals; Trustee of Estates; 25 years experience in the appraising of real estate; was Assistant to the Comptroller, Metropolitan Life Insurance Co. for 10 years; has been engaged in the real estate business since 1912.

ALBERT W. LOCKYER, WHITE PLAINS, NEW YORK. Born in New York City, N. Y.; Vice-President, Prince & Ripley, Inc.; Active Member, Westchester County Realty Board; Past President, White Plains Realty Board; Treasurer, Westchester County Realty Board; Director, White Plains Chamber of Commerce; Director, Westchester County Civic Association; President, Westchester Capital Corporation; professional territory covers Westchester County, New York; more than 10 years experience in the appraising of real estate, including the valuation of residential and commercial properties; Sponsored by

Stephen L. Angell, M. A. I., and endorsed by Robert A. Anderson, M. A. I., and Edward C. Heald, M. A. I.

FRED E. SMITH, AKRON, OHIO. Born in Saybrook Township, Ohio; Active B Member, Akron Real Estate Board; professional territory covers Summit, Stark, Portage and Trumbull Counties, State of Ohio; Director, Brewster-Arlington Company and Goodhue Park Allt. Company; subdivision developer and builder of homes; past President, Akron Real Estate Board; Member, Appraisal Committee, Akron Real Estate Board; Member, Executive Committee, Summit County Property Owner's Association; Member and first Chairman, Cuyahoga Falls Property Owner's Association; handling repossessed properties for Sears, Roebuck & Company in the Akron territory; 22 years experience in the appraising of real property; 16 years banking experience; Graduate of the real estate appraisal course given by the National Association of Real Estate Boards in 1929.

LEONARD DOWNIE, SEATTLE, WASHINGTON. Born in Seattle, Washington; Active Member, Seattle Real Estate Board; Past Vice-President and Member, Board of Directors, Seattle Real Estate Board; Member, Appraisal Committee, Seattle Real Estate Board; Member, Appraisal Division, H. O. L. C.; Member, firm of Downie and Van Voris; professional territory covers all of Washington and also Portland, Oregon; Author and Lecturer; Active in real estate appraising for 8 years; valuation experience includes the appraisal of acreage, garages, stores, apartment buildings, homes, automobile parking stations, and industrial property.

GEORGE I. NOYES, SEATTLE, WASHINGTON. Born in Mt. Vernon, Washington; Executive Secretary and Chairman of the Appraisal Committee, Seattle Real Estate Board; Active Member, Seattle Real Estate Board; professional territory covers Seattle and King County; Teacher and Lecturer; six years active experience in the appraisal of real estate including the valuation of apartments, residences, commercial, vacant, and industrial properties; Appraiser for H. O. L. C.

T. O'J. WILSON, BLUEFIELD, WEST VIRGINIA. Born in Radford, Va.; Individual Member of the National Association of Real Estate Boards; engaged in business as real estate Broker and Building Manager; County Appraiser, H. O. L. C.; President, Easley-Wilson Co., Inc.; professional territory covers Mercer County, McDowell County, Mingo County, West Virginia, and Tazewell County and Blount County, Virginia; 20 years experience in the appraising of real estate; experience includes valuation of commercial hotels, commercial properties, office buildings, and residences; experienced also in the development of subdivisions and building of homes; Sponsored by S. W. Florence, M. A. I.

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ROBERT HUNTLEY.....67 Liberty St.
S. E. KAZDIN.....2 Lafayette St.
PHILIP W. KNISKERN.....101 Park Ave.
CHARLES W. MORRISON.....67 Liberty St.
IRVING I. ROSENBAUM.....384 Broadway

Rochester
ABRAHAM BERGHASH.....130 Clinton Ave., So.

Scarsdale
S. L. ANGELL.....30 E. Parkway

Syracuse
EDWARD EAGAN ....204 Starrett-Syracuse Bldg.

White Plains
ALBERT W. LOCKYER.....Depot Plaza

Yonkers
EDWARD C. HEALD.....20 S. Broadway
PAUL WEGENER.....2 Hudson St.

NORTH CAROLINA

Charlotte
S. T. HENDERSON.....111 Hermitage Rd.

Winston Salem
C. S. NOBLE.....674 Manly St.

OHIO

Akron
JOHN C. KYLE.....520 S. Firestone Blvd.
FRED E. SMITH.....226 Ohio Bldg.
W. F. VOGES.....1109 S. Main St.

Alliance
L. D. SCRANTON.....341 E. Main St.

Canton
MARK HAMLETON.....417 Mellett Bldg.
WILLIAM J. UEBELHART.....419 Mellett Bldg.

Cincinnati
HOWARD R. BURGESS.....104 Neave Bldg.
FRED DROEGE, JR.....104 Neave Bldg.
JAMES W. FARRELL.....1142 Herschel Ave.
JOHN H. FREY.....1334 Herschel Ave.
JAMES J. GROGAN..S. W. Cor. 5th and Main Sts.
JOSEPH B. HALL.....35 E. 7th St.
ALBERT J. MAYER.....1515 1st Natl. Bk. Bldg.
P. LINCOLN MITCHELL.....
.....S. W. Cor. 5th and Main Sts.
RUSSELL PRICE....S. W. Cor. 5th and Main Sts.
WALTER S. SCHMIDT..S. W. Cor. 5th & Main Sts.
LEWIS R. SMITH.....409 American Bldg.
JOHN B. SPILKER.....104 Neave Bldg.

Cleveland
TALMAGE D. AUBLE.....15509 Madison Ave.
BEN B. BEYER.....1425 Williamson Bldg.
RAYMOND T. CRAGIN....825 Natl. City Bk. Bldg.
WALTER R. GRANGER.....310 Hippodrome Bldg.
JOSEPH J. HAAS.....200 Marshall Bldg.
JOSEPH LARONGE.....600 Union Trust Bldg.
EDWIN H. McINTOSH.....
.....1029 Society for Savings Bldg.
WARREN L. MORRIS..420 Natl. City Bank Bldg.
E. L. OSTENDORF.....1105 Chester Ave.
CARL A. PALMER.....850 Euclid Ave.
MAX J. RUDOLPH.....1105 Chester Ave.
CARLTON SCHULTZ.....1223 Schofield Bldg.
ALEXANDER S. TAYLOR..1930 Union Trust Bldg.
V. C. TAYLOR, II.....1930 Union Trust Bldg.
WM. J. VAN AKEN.....1715 Euclid Ave.

Geneva
J. EARL MILLER.....Miller Bldg.

Medina
C. L. BAKER.....R. D. 7

Springfield
HARRY S. KISSELL.....927 1st Natl. Bk. Bldg.

Toledo
CLAUDE A. CAMPBELL.....707 Ohio Bank Bldg.
GEO. P. CROSBY.....609 Madison Ave.
HOWARD ETCHEN.....725 Adams St.

PENNSYLVANIA

Bethlehem
WM. C. BADER.....214 Odd Fellows Bldg.

Harrisburg
EVAN J. MILLER.....213 Locust St.

Lancaster
HARRY W. BUTTS.....24 E. Orange St.

Lansdowne
W. RAYMOND EVANS.....19 N. Lansdowne Ave.

Philadelphia
PHILIP N. ARNOLD.....1324 Walnut St.
BOYD T. BARNARD.....123 S. Broad St.
E. L. CARLSON, The Fidelity Mutual Life Ins Co.
.....The Parkway at Fairmount Ave.
C. HARRIS COLEHOWER.....5942 Chestnut St.
FRANK P. FELTON, JR.....37 S. 16th St.
SAMUEL T. HALL.....1500 Locust St.
C. HARRY JOHNSON.....1307 Packard Bldg.
SAMUEL C. KANE.....511 Land Title Bldg.
S. CRAIG KANE, JR.....511 Land Title Bldg.
MAURICE R. MASSEY....S. E. 13th and Green Sts.
WILLIAM I. MIRKIL.....1500 Walnut St.
ROBERT J. NASH.....1214 Locust St.
RICHARD J. SELTZER.....15th & Locust Sts.
J. WILLISON SMITH.....100 S. Broad St.
MARTIN STOTZ .....516 Land Title Bldg.
AMBROSE J. WINDER.....1420 Walnut St.

Pittsburgh
J. W. CREE, JR.....211 Fourth Ave.

Wilkes Barre
C. A. LEIGHTON..702 Deposit & Savings Bk. Bldg.
EDWARD L. LEWITH.....428 Miners Bk. Bldg.

RHODE ISLAND

Providence
HAL FORRESTER COOMBS....211 Waterman St.
JAMES DEVINE.....801 New Industrial Tr. Bldg.

TENNESSEE

Nashville
J. W. DENIS.....209 Warner Bldg.
J. W. GRAHAM.....411 Nichol Bldg.

TEXAS

Dallas
HENRY S. MILLER.....405 Southland Life Bldg.

Houston
W. G. BURCHFIELD.....803 2nd Natl. Bk. Bldg.

UTAH

Salt Lake City
EDWARD M. ASHTON.....302 Kearns Bldg.

VIRGINIA

Richmond
JOHN W. BATES.....723 E. Main St.
HENRY S. RAAB, Raab & Co.....710 E. Main St.
JOHN SLOAN.....18 N. 5th St.
J. GUTHRIE SMITH.....924 E. Main St.
MORTON G. THALHIMER.....1013 E. Main St.

WASHINGTON

Seattle
LEONARD DOWNIE....1500 Northern Life Tower
GEORGE I. NOYES.....1411 4th Avenue Bldg.

Walla Walla
C. C. CONNER.....First National Bank

WEST VIRGINIA

Bluefield
S. W. FLORENCE.....309 Peery Bldg.
T. O'J. WILSON.....439 Peery Bldg.

Charleston
CHARLES UHRIG .....
.....Box 1019, Charleston Natl. Bk. Bldg.

WISCONSIN

Madison
HENRY H. BUSH, Stanley C. Hanks Co.....
..... 311 State St.

Milwaukee
K. LEE HYDER.....525 E. Michigan St.

CANADA

Hamilton, Ontario
CYRIL R. DE MARA....405 Bk. of Commerce Bldg.

London, Ontario
BERT WEIR .....156½ Dundas St.

Toronto, Ontario
FRANK McLAUGHLIN.....34 King St., W.